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Modern Obstetrical Nursing

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WHEN PREGNANCY MAY OCCUR
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THE SIGNS OF PREGNANCY
THE BEST YEARS FOR PREGNANCY
MULTIPLE FETATION

SERIES THIRTY-SEVEN

Modern Obstetrical Nursing

By EUGENE UNDERHILL, M.D.

Author of A Text-book of Anatomy;
Infectious Diseases and Their Management;
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THIRD EDITION

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The HOSPITAL Extension COURSE

Modern Obstetrical Nursing

Obstetrics is that branch of science which treats of pregnancy, child-birth and the care of the mother and child.

Pregnancy

Pregnancy is the state or condition of being with child and the development of the child in the uterus.

Parturition

Parturition or labor is the expulsion or bringing forth of the child from the uterus.

Lying-in Period

The lying-in period is the time from child-birth until the woman is fully recovered—a period of five to eight weeks. It is also called the puerperium, or the puerperal period.

When Pregnancy May Occur

Pregnancy usually occurs near the time of a menstrual period, probably a little before the menses begin or a little after the flow has ceased.

It is possible, however, for pregnancy to begin at any time, even midway between the menstrual periods.

Ovaries and Ovules

An ovary is about the size and shape of an almond. There are two ovaries, one is located on each side of the uterus, with which it is connected by means of a tube called the Fallopian tube or oviduct.

The ovary has stored in it a large number of ovules (little eggs) some of which mature about each menstrual period and pass down through the Fallopian tube.

Forming a New Body — a Human Embryo

Most of the ovules are lost in the discharges from the uterus. But if the male element (the

spermatozoön) should meet a maturing ovule, they will unite to form a new body—a human embryo.

The union of the ovum and the spermatozoön takes place in the Fallopian tube. The spermatozoön ascends the female genital tract to the place of meeting by means of its own propelling element or tail, called *flagellum*. It is irresistibly attracted upward through the vagina, cervix, uterus and tube, in spite of gravity, and in spite of the outward flow of the discharges and the construction of the parts, all of which would apparently tend to prevent its passage upward.

When the spermatozoön encounters the maturing ovum it rapidly encircles the ovum several times and then suddenly enters or unites with it. Here motherhood begins; here begin all those mysterious processes concerned in the creation, growth and development of another human being.

Every day and every hour unseen forces are at work affecting mighty changes in the ovum.

These forces, whatever they may be, also profoundly affect every organ and tissue of the mother's body. Some women are not conscious of these changes for several weeks or months, others are almost immediately aware of some mysterious force or influence affecting body, mind and spirit.

To those who cheerfully accept the duties, responsibilities and privileges of this new experience, life immediately has new meanings, new joys, new hopes. Some women have declared that these prospective joys and hopes are immediately translated to their minds and spirits in beautiful music which they seem to hear during sleep or in half-waking moments; or in great poems which they seem to read or write. Others hear strange voices, are troubled with nameless fears, and are disturbed by fancied sounds of faint foot-falls, approaching, they know not whence.

Many, if not all, of these influences and emotions can be explained on purely physical grounds,

but the fact remains that the mightiest and most mysterious forces of the universe are involved and concerned in the creation and development of human life.

After this union of the ovum and spermatozoön, the new body thus formed, the embryo, passes slowly down through the Fallopian tube, requiring several days to reach the uterus.

During this time the uterus is preparing to receive the fertilized ovule or embryo. A fold of the mucous membrane of the uterus is thrown out, forming a soft, down-like lodging place or bed, for the embryo, where it is held for development, requiring 280 days (40 weeks), nine calendar months, or ten lunar months. (A lunar month is a month of 28 days.)

Sometimes the impregnated ovule, instead of passing into the uterus, remains in the Fallopian tube, this is called "tubal pregnancy," or the impregnated ovule may pass into the abdominal

cavity, when it is called "abdominal pregnancy," or impregnation of the ovule may have occurred in the ovary, where the ovule may remain, resulting in what is called "ovarian pregnancy." Any one of these three forms of pregnancy—tubal, abdominal and ovarian—may be spoken of as "extra-uterine pregnancy" or ectopic gestation. Extra-uterine pregnancy is a very serious condition and requires immediate operation.

Probable Date of Confinement

To ascertain the time of expected child-birth, the first day of the last menstrual flow is the date from which reckoning is to be made.

Simply count forward from that date the required time for development 280 days or 10 lunar months.

An easier method is to count backward three calendar months from the first day of the last menstrual flow and add one week to that date. For example, if the last menstrual flow began

April 12, counting backward three months gives January 12; adding one week (seven days) gives January 19 as the approximate time or probable date of confinement.

If there is no menstrual history, the date of "quickening" may be taken as a basis of calculation. In *primipara* (a woman in her first pregnancy) "quickening" occurs at about four and a half (lunar) months (eighteen weeks) from the date of conception. Counting forward twenty-two weeks from date of quickening will give the approximate date when the primipara may be expected to be in labor.

In the *multipara* (a woman who has previously borne children), "quickening" occurs at about four (lunar) months (sixteen weeks) from the date of conception. Counting forward from the date of "quickening," twenty-four weeks will give the approximate date when the multipara may be expected to be in labor.

The doctor may estimate the probable date of

confinement from the height of the fundus (upper part of the uterus).

The exact date of confinement, however, cannot be ascertained or predicted with certainty.

While the duration of pregnancy is usually considered as 280 days, yet the duration may vary greatly. It is said that the duration in some instances has been as long as 312 days and as short as 180 days. According to French, German, and English law and some legal decisions in this country, a child is considered legitimate if born between 180 and 312 days from the date of the last intercourse with the husband. Regarding the point of legitimacy, this is known as the "Napoleonic Code."

The Signs of Pregnancy

The important signs of pregnancy are:—

1. *The stopping of the menses.* It is not usual for a pregnant woman to have her menses. In some rare cases she may,

but the stopping or cessation of the menses is considered one of the most important signs of pregnancy. The cessation of the menses, however, is not always an indication of pregnancy. Sometimes anaemia; tuberculosis and various pelvic diseases cause a stopping of the menses.

2. *Nausea.* This occurs chiefly in the morning. The patient may vomit a small amount of mucus. The nausea begins in two or three weeks after conception, and is likely to continue until about the end of the fourth month of pregnancy.

3. *Changes in the breasts.* The breasts enlarge, and will likely have some pain and soreness in them; there may be tingling sensations in the breasts as early as the fifth or sixth week. The color of the nipple and the skin close to the nipple (the areola) becomes much darker, especially in brunettes; in blondes, the nipples and areola may be of a deep pink color. The veins of the

breasts become prominent. If the veins appear unusually blue in color it indicates that the milk supply is likely to be good and rather abundant.

4. *Quickening.* This is the movement of the child felt in the abdomen, usually first noticeable at four and a half months, or at about the middle of pregnancy.

5. *Enlargement of the abdomen.* This will not be appreciable until near the end of the fourth month.

6. *Nervous Disorders.* During pregnancy there is often a marked change in the patient's dispositon. She may become more irritable; some women, however, are less irritable than usual, and more quiet and placid in disposition. Often a perverted appetite for certain unusual articles of diet is a manifestation of nervous disturbance due to pregnancy.

7. *Changes of the skin.* The navel, or umbilicus, and the linea alba (the faint

white line extending down the front of the abdomen in the middle line) turns darker, the color resembling somewhat the changes which occur in the areola of the breasts.

Striae, or streaks, somewhat of a purplish, or bluish, color may appear on the abdomen. These striae result from the stretching of the tissues, due to the enlarging uterus. The striae disappear in some cases after the birth of the child, but in quite a large percentage of cases a faint trace of them can be noticed for years.

The skin of the face often changes, it may present a grayish, somewhat mottled or freckled appearance.

8. *Changes in the vagina and cervix.* The mucous membranes of the vagina take on a scarlet or purplish discoloration.

The cervix or neck of the uterus is soft.

The Best Years for Pregnancy

Children have been born of mothers under ten years of age and over sixty-two years of age.

Some have declared the best years for pregnancy to be between the ages of twenty-two and twenty-five. From the physical or animal side of the question, these years are probably specified from the fact that the mother would likely be mature and in possession of a maximum of physical endurance and force. It is a question, however, whether children born of mothers during these years have any better physical and mental records than those born during other periods of life. It is a well-known fact that some of the most intellectual men and women in the world's history as well as some of the strongest physically, were born of mothers late in life; sometimes the last child proving the strongest, most intellectual and brilliant of them all. On the other hand, physically strong and striking intellectual characters have been born of very young mothers.

As to the influence on the child, therefore, we cannot say there are any *best* years, they are *all* good.

As to the influence on the mother, the question that is probably uppermost in the mind of the prospective mother is whether she can safely pass through the ordeal; probably most women approach this experience, especially for the first time, with this thought in mind.

To all such, the question as to the *best* years for pregnancy resolves itself into the query as to whether any years are safe—here again we may say there are no *best* years, they are all *good* years and all *safe* years. This is not a mere expression of opinion, it is a matter of experience and statistics. Nature (or shall we say Nature's God?) is a wise guide as to times, conditions and results.

The very fact that provision is made for the bearing of children during a long period of life is evidence of its reasonable safety at any time during that period. Of course some particular cir-

cumstance or abnormality of size or form of the pelvic organs may affect individual cases, but these are rarely, if ever, due to circumstances relating to the age of the prospective mother.

Nature appears to take every precaution during pregnancy; every organ and tissue of the body is tried, tested and strengthened; the heart becomes slightly enlarged; the blood vessels somewhat distended and the blood supply increased. In the later months of pregnancy the blood clots more readily and easily, showing that nature is on guard against a hemorrhage at child-birth.

The mortality among women who are properly cared for and nursed is very slight. However, taking the whole United States together, under the varying conditions of neglect and carelessness during parturition and the puerperium, we must face a rather appalling record of needless fatalities.

The well-informed and conscientious nurse is a large factor in constantly reducing the dangers and fatalities incident to child-bearing. The

knowledge of how to avoid dangers during this period is now so definitely settled and may be so easily understood that every nurse, and indeed every prospective mother, even in the most remote part of the country, ought to know the facts and be able to institute and exercise this life-saving knowledge.

Multiple Fetation

Multiple fetation signifies that there is more than one child in the uterus.

This is supposed to be due to the division of an ovum into two or more parts occurring at the time of impregnation, or the impregnation of two or more ova at the same time or at different times.

Twins are said to occur one in a hundred cases; triplets one in eight thousand cases; quadruplets one in three hundred and fifty thousand; a few cases of quintets and sextets have been reported.

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RATIO OF THE SEXES

PREDETERMINATION OF SEX

CHARACTERISTICS OF THE UNBORN CHILD

PHANTOM PREGNANCY

PRENATAL INFLUENCES

THE HYGIENE OF THE PREGNANT WOMAN

SERIES THIRTY-EIGHT

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Ratio of the Sexes

Predetermination of Sex

The various bureaus of vital statistics show that the ratio of the sexes at birth is about fifty-three boys to forty-seven girls; or in other words, of every hundred births, fifty-three are boys and forty-seven are girls.

The predetermination of the sex of the child is impossible. The sex of each ovum is probably fixed in the ovaries of every female child before or soon after birth, or at least at some time prior to puberty.

Many speculations have been indulged in as to how the sex of the child may be predetermined. Every method thus far suggested has been of no avail.

It is one of the wonders and mysteries of nature that the relation of the sexes in both plant and animal life is maintained at an even balance or at the same ratio. Any method to predeter-

mine or absolutely control the sex would disturb this balance and would probably be of no benefit if it did not actually work harm. The faith of our fathers and mothers which accepted the child as Heaven-sent, whether boy or girl, is still a good doctrine.

Characteristics of the Unborn Child

At the end of the second month, the embryo is completely formed.

During the third month, the embryo is four inches long and weighs one ounce, and the fingers and toes are formed and distinct in outline.

During the fourth month, the child is well-nigh as perfect in form and outline as at birth.

At the sixth month, it is twelve inches long, the finger and toe nails formed, and it weighs one and a half pounds.

At term, the child is about twenty inches long and usually weighs seven pounds or more.

In the great majority of instances the child lies in the uterus with the head down.

In a few instances the head is pointed upward, and when such a child is born it is called a "breech presentation," because the buttocks appear first and the head is delivered last.

Occasionally the child lies in a transverse (cross-wise) position.

The child is enveloped in a membrane called the *amnion* and floats in a clear straw-colored liquid called the *liquor amnii*. The purpose of the *amnion* is to retain the *liquor amnii* and to aid in the dilatation of the cervix of the uterus during labor. The *amnion* is frequently referred to as the "bag of waters."

Phantom Pregnancy

Phantom pregnancy, also called *pseudocyesis*, is a condition arising in a woman who greatly de-

sires to become pregnant or who is afraid of being pregnant, and who is more or less hysterical.

She imagines herself to be pregnant, and so strongly does the mind dwell on the subject that she makes herself believe she has the signs of pregnancy. Any enlargement of the abdomen as from flatus, ascites, or fat, will strengthen her conviction.

Contraction of the abdominal muscles or the movement of gas in the bowels is considered to be the movement of the child.

The natural changes that occur on the approach of the menopause may lead a woman to imagine she is pregnant.

Sometimes even the physician is deceived by such a woman. The administration of an anaesthetic and a thorough examination usually dispels the illusion. When this is resorted to, the presence of a witness is required.

Sometimes a very rapidly-growing uterine or abdominal tumor will cause a woman to imagine she is pregnant.

Prenatal Influences

In these days when doubts are being thrown upon every accepted doctrine, or theory, it is interesting to note that all possibility of prenatal influence is called in question. Many physicians declare emphatically that there is no such thing as "prenatal influence;" on the other hand, there are many physicians who do believe in it.

The subject may be difficult to prove, but the fact may remain. It is well known that fright can produce abortion, and this being the case, it seems reasonable to suppose that other emotions and influences may affect the child.

Mothers, however, are often better guides and know more of such matters from actual experience than can be accounted for by all the learned speculators in the world. No one can hardly question

the wisdom of the most intelligent mothers who, while pregnant, make it a practice to indulge in good reading, high thinking, devotional exercises, and in listening to beautiful music and in looking upon beautiful things, both in art and nature.

There is a popular notion that horrible sights may directly affect the physical characteristics of the child; some have declared that the sight of an animal with its head cut open would result in severing the head of the unborn child in the same way; or to be frightened by a toad or a snake would give to the child some suggestive movements of these animals. Some think that congenital nevus (birth mark) is due to fright as a result of seeing a sudden glow of fire or some horrible burn. Looking upon marked deformity of any kind is also thought by some to induce the same kind of deformity in the unborn child.

That the child in the uterus can be affected in these ways is very doubtful, but if there is any such possibility, it is said that the mother can

exercise the only known remedy, which is to think at once of the child when by chance such sights come to her vision. The idea advanced for the protection of the child in this way is that the mother's immediate thought of the child results in controlling her nervous organism in a way to repel any unfavorable influences.

Certainly disease of either parent does affect the child.

The parents should be people of proper lives; they should be robust in health and free from disease, especially any disease that is liable to be transmitted to the child.

Probably the greatest evil factor influencing offspring is venereal disease. If either of the parents has venereal disease, then the children are liable to be affected.

People who are not sound in body and mind have no right to procreate and bring into the world children who are vicious, deficient in mind

or diseased in body. Such children are unable to cope with the duties of life.

Concerning many manifestations of disease, it is perfectly proper to ask, "Who hath sinned, this man or his parents?"

Children have a right to be well-born.

If candidates for matrimony were obliged to be perfect in health, then the weaklings would gradually be eliminated and a race of people would appear of greater strength, larger size, longer lives and better minds. There would be "giants in those days." Methuselah may yet be outdone for long living.

In time past the movements of the Heavenly bodies have been thought to influence the unborn child; the particular star under which the child was born has been called the "guiding star," or the "lucky star," and many strange fancies have been woven by the old astrologers in respect to the position of the planets at the time of birth.

However fanciful they may have been, and they certainly were fanciful, it is interesting to note that some statistics show that there are more births during the new of the moon than during the old of the moon. The observation made by many women that the menstrual function is influenced by a change in the moon may have some relation to this circumstance.

It is an interesting observation, also, that there are more births between midnight and seven a.m. than during any other like period of time in the twenty-four hours. Old fishermen in sea coast towns and localities have a saying, that "births are more likely to occur when the tides are coming in" and "deaths when the tides are going out."

The Hygiene of the Pregnant Woman

1. The pregnant woman should have an abundance of fresh air.

2. Exercise in the open air daily, especially

walking is very beneficial. But no exercise should be carried to the extent of fatigue.

3. She should be particular to keep her skin clean so as to relieve the kidneys of as much extra work as possible.

General bathing should be frequent and thorough. The genitals should be kept scrupulously clean, but douches should never be taken by the patient nor administered by the nurse unless specifically ordered by the attending physician.

Bathing in a tub is not desirable, for the reason that the exfoliations from the body and other extraneous matter floats to the top of the water and may come in contact with portions of the mucous membranes of the vagina, and thus favor infection. It is especially important that tub-bathing should be avoided during the later months of pregnancy, and particularly near term.

4. She should have plenty of good, nourishing food, such as meat (meat only once a day), milk and eggs. Over-eating should be avoided. She should not eat between meals.

5. She should take extra care at times corresponding to the menstrual period.

6. She should at once report to the doctor any persistent and continuous headaches, failing vision or pains in the abdominal region.

7. She should keep the bowels in good condition, avoiding constipation. Constipation may often be relieved without resorting to purgative or even laxative medicines—an injection into the rectum of six or seven ounces of olive oil and allowing it to remain there for several hours and then following with an injection of plain water, will often relieve very stubborn cases of constipation. Glycerine suppositories may also be used.

Constipation may be relieved by proper regulation of the diet; fruits are very helpful, especially apples or oranges at night; but as a general rule, if there is a tendency to liver involvement, oranges should be eaten with considerable moderation. The free use of prunes as an article of diet is beneficial in well nigh all forms of constipation.

8. The teeth should have special attention; during pregnancy they often show a marked tendency to decay, due to an acid state of the saliva which is liable to exist during that period. The teeth should be kept clean and some alkaline mouth-wash used. Almost any of the dental mouth washes may be useful, or milk of magnesia, which is an antacid, may be used.

If the teeth are in such condition as to require the services of a dentist, the work should be rather of a temporary character; that is, the pregnant woman should not undergo prolonged and ex-

hausting dental work. Under no circumstances should the pregnant woman take nitrous oxide gas, as it may result in death to the unborn child.

These factors are especially important, because the various cellular changes are much more extensive in the pregnant woman than in a woman not pregnant.

Considering the human body to be a laboratory for the changing of foods into human flesh, blood, bone, nerves, etc., it is evident that these changes must be very much more rapid in the woman who is developing and supporting another human being.

For additional suggestions regarding the hygiene of the pregnant woman, it is a good plan for her to consult her family physician during the very early months of pregnancy. The doctor may find it expedient to make occasional examinations of the urine, to take the blood pressure and to offer such suggestions as the individual case may require.

Modern Obstetrical Nursing

WHAT THE PREGNANT WOMAN SHOULD AVOID

CARE OF THE NIPPLES

THE DISORDERS OF PREGNANCY

POSITION OF UTERUS AT DIFFERENT PERIODS

FALSE AND TRUE LABOR PAINS

SERIES THIRTY-NINE

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What the Pregnant Woman Should Avoid

The pregnant woman should avoid:—

1. Crowds and crowded places, on account of the probable excitement and vitiated air.
2. Violent exercises, such as very long walks, hurrying up or down stairs, any considerable amount of sweeping, moving of furniture, washing at a tub, sewing on a machine, or any other exercise requiring excessive muscular effort.
3. Falls, accidents of any kind, or any sudden jarring of the body.
4. People having contagious diseases.
5. Undue exposure and liability to the development of colds.
6. All stimulants of every kind, unless specifically ordered by the physician.
7. All tight clothing, tight lacing, or any constriction about the abdomen, all pressure from above downward should be especially avoided; a moderate amount of support from below, upward, may be of

value—it tends to support the increasing weight of the uterus and adds to the comfort of the mother.

8. Sexual intercourse during the entire period of gestation. (Sexual intercourse may not only interfere with the health of the pregnant woman, but it tends to unfavorably affect the child, particularly the mentality of the child.)

Care of the Nipples

The nipples should be kept in a soft, pliable condition.

An occasional application of alcohol, bay rum, or alum dissolved in water, or equal parts of glycerol of tannin and rose water may be applied to the nipples twice a day.

Bathing the breasts daily with cold water, or cold salt water, will tend to keep the nipples in good condition.

Disorders of Pregnancy

There ought not to be any disorders of pregnancy, or at least there should be very few.

It would seem that many of the troubles that are associated with the state of pregnancy are due in large measure to inherited weaknesses and perverted ideas of civilization. That this is true is proved by the smaller number of disorders of pregnancy that are found among semi-civilized peoples.

Some of the numerous disorders of pregnancy to look for are:

Varicose Veins
Nausea
Pruritus
Abortion

Varicose Veins

Varicose veins are veins greatly distended, sometimes as large as the finger, due to the enlarging uterus hindering the free circulation of the

blood. These veins are found especially about the ankles, extending sometimes up to the knees, or even above the knees. They may be ruptured by an accidental blow, or simply by over-distention.

The nursing for varicose veins will consist in gentle massage, with the application of witch-hazel or alcohol.

A bandage, snugly applied, will give much comfort, and will be a protection and support to the affected parts. Begin at the instep and continue the bandage as high as required.

An elastic bandage is preferable for all cases that are of a serious character. When the bandage is used, it should be taken off at night and put on in the morning.

Keeping the bowels loose or at least rather free, will be of some benefit.

Elevating the feet will influence the circulation, and thus tend to aid in relieving the varicose veins.

Nausea

Nausea may be excessive in some cases. A small amount of nausea is normal, but when it becomes excessive and the patient fails to be nourished, it is reckoned as a disorder.

The nurse may employ simple measures to relieve the nausea. Counter-irritation over the region of the stomach is sometimes very efficient; apply a mustard plaster and leave it on long enough to slightly redden the skin. (*Caution:* Under no circumstance should this patient be blistered for this disorder.)

If there is much acidity, indicated by sour belching of gas, lime water either administered alone or in milk, may give relief.

A fourth of a teaspoonful of baking soda dissolved in water is sometimes useful.

In some cases a slice of sugared lemon may be helpful.

Milk, broths, teas and eggs are proper foods to consider for excessive nausea.

Some patients will be relieved by taking very hot foods; others will do better on ice cold foods.

The white of an egg stirred in water, with a little sugar added, and a drop of vanilla, if the patient likes it, will often be retained by these patients when everything else is rejected. Give a teaspoonful of this preparation every half hour until the patient is stronger and able to retain other foods.

Rectal feeding will be necessary in some cases when the stomach will not retain any food.

Pruritus

Pruritus, or itching, is sometimes a troublesome disorder of pregnancy. It is likely to occur especially about the genitals, but in some cases it extends over much of the body. It may be the result of an unhealthy condition of the mucous

membrane of the vagina, associated, probably, with leucorrhoea.

Kidney affections and jaundice may be causes of pruritus.

It may be of nervous origin.

A diet containing an excess of sugar will cause it in some people.

To relieve pruritus, attention must be given to removing the cause, if possible.

The following preparations or articles may be used locally to allay the irritation:—

A saturated solution of baking soda in water.

Carbolic acid, fifteen minims to a quart of water (about 1 to 1,000).

Gum arabic dissolved in water.

Lemon juice.

Spirits of camphor.

Sulphur ointment.

Abortion Miscarriage

The terms "abortion" and "miscarriage" are often used interchangeably, but properly speaking "abortion" applies to loss of the embryo at any time prior to the end of the third month, and "miscarriage" to loss of the fetus at any time after the end of the third month. The most likely time for either abortion or miscarriage to occur is at the end of some period of four weeks, when the menses would have appeared had the patient not been pregnant. The pregnant woman should keep a record of the date of her menses, and each period of four weeks, so that she will know exactly when each menstrual period would have come. In many cases the woman will have some feeling as if her menses were about to appear, and should take special care of herself at that time.

Causes of Abortion or Miscarriage

Among the important causes of abortion or miscarriage are:—

1. Syphilis in either parent. This is one of the most important of all causes (eighty per cent. of all repeated abortions are due to syphilis).
2. Disease of the uterus.
3. Displacement of the uterus.
4. Anaemia.
5. Injuries.
6. Great physical exertion.
7. Mental emotion, as fright, grief, anger.
8. The use of purgative medicines.
9. Contact with contagious diseases.
10. Habit, that is, the woman may have had several abortions brought on by some of the preceding causes, and thus the uterus may acquire the habit.

Symptoms of Threatened Abortion or Miscarriage

There may be chilliness and fever. There will surely be bearing-down pain, pains in the abdomen and down the legs, pains coming on at regular in-

tervals; a discharge of mucus from the vagina is very significant; later, there will be blood, at first bright red, then darker and clotted.

The fetus or child is likely to pass out in these discharges. If it occurs in the early months of pregnancy, the embryo may pass out in the discharges and escape the notice of the attendants.

The discharges should be carefully examined by floating out in water all solid or semi-solid portions thereof.

The discharges should be kept for the physician's examination, so that he may know just what has passed from the vagina.

At the first appearance of any of these symptoms a physician should be summoned.

The patient should lie in bed and remain quiet, not arising for any purpose whatever. She should use the bedpan and urinal, and have light diet. Visitors should not be permitted. She should re-

main in bed for several days after all symptoms of miscarriage have disappeared.

If the miscarriage should actually occur, then the patient should have all the care given to a woman after labor at full term.

Other Disorders of Pregnancy

Other disorders of the pregnant state are:—

1. Salivation (increased flow of saliva).
2. Pyrosis ("heartburn").
3. Headache.
4. Vertigo.
5. Fainting.
6. Hysteria.
7. Neuralgia, especially in the face, temples or teeth.
8. Constipation.
9. Diarrhoea, especially during the last two weeks.

10. Piles. These are sometimes very troublesome. (Some relief may be given by bathing the parts well with hot water.)

11. Pain in the back and sides.

12. Cramp in the calves of the legs and soles of the feet. (Massage or rubbing may relieve this condition. If the nurse is present when this occurs, she should forcibly straighten and extend the leg and at the same time bend the foot toward the knee.)

13. Inability to retain the urine.

14. Insomnia or sleeplessness.

15. Anaemia. (This condition calls for a diet of meat, milk and eggs. Out-door air is essential.)

16. Edema (swelling or effusion of serous fluid into the connective tissue), found especially about the ankles or below the eyes. It may be the result of kidney, liver or heart involvement.

Position or Height of the Uterus at Different Periods of Pregnancy

At the end of the *fourth* (lunar) month, the fundus (upper part of the uterus) touches against the front wall of the abdomen, and may be felt just above the brim of the pelvis. This is about the time that

(a) The nausea ceases,

(b) The movements of the child are noticeable,

(c) The abdomen is perceptibly enlarged.

At the end of the *sixth* (lunar) month the enlarging uterus extends to the umbilicus, pushing it out, giving the abdomen a rounded, smooth appearance. This is an important fact to know in regard to patients who do not know when pregnancy began, as it furnishes quite accurate information as to how far pregnancy has progressed.

At the end of the *eighth* month (lunar month), the uterus is high in the abdomen, pressing against the cartilage of the breast bone. The woman will then probably complain somewhat of shortness of breath.

At *nine and a half* (lunar) months, subsidence, "falling," or "lightening" occurs. Subsidence, "lightening" or sinking of the uterus usually occurs two weeks before labor (hence confinement may be expected two weeks from the time of "lightening"). "Lightening" means that the uterus descends somewhat and the child's head sinks into the pelvis; at this time the umbilicus becomes more prominent and the waist line lower. The mother usually feels some better from this change in the position of the uterus. This sinking of the uterus, however, will probably irritate the bladder and rectum, causing a frequent desire to urinate and to stool.

False Labor Pains

Toward the close of the *tenth* lunar month the woman begins to have pains.

At first the pains are of an irregular character, not well defined and not fixed or localized. These are called "false labor pains."

True Labor Pains

Some time after the beginning of the "false labor pains" the pains settle down to some definite place; they come at regular intervals, the intervals getting shorter; the pains gradually get stronger. These are *true labor pains* and are due to the contraction of the uterus.

The physician should be notified as soon as the pains begin, not that he is needed there at once, but to enable him to arrange his work so that he may be summoned when the pains become stronger.

Modern Obstetrical Nursing

THE FIRST STAGE OF LABOR

PREPARING FOR LABOR

SERIES FORTY

Modern Obstetrical Nursing

By EUGENE UNDERHILL, M.D.

Author of A Text-book of Anatomy;
Infectious Diseases and Their Management;
Nursing—The Heart of the Art;
The Graces of the Nurse;
Sick-room Care and Practice, etc.

THIRD EDITION

Philadelphia:

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Nursing

Underhill

The Stages of Labor

There are three stages of labor, as follows:

The first stage of labor
The second stage of labor
The third stage of labor

THE FIRST STAGE OF LABOR

The first stage, in the average case, may be from one hour to a day or two. No one can tell with any certainty how long it will last in a given case. The average duration in women pregnant for the first time (primipara) is about fourteen hours. In women who have previously borne children (multipara) the average duration is nine hours.

In most cases the very first symptom, in the first stage of labor, is pain, beginning low down in the back, and extending around to the abdomen. The pain lasts for a few seconds, usually not

more than half a minute; then comes an interval of from a few minutes to a half hour, in which there is no pain; then another pain is experienced. These pains come with considerable regularity. As time goes on the intervals between pains become shorter, and the duration and severity of the pains greater. There may be a frequent desire to urinate and to stool, owing to pressure of the uterus on the bladder and rectum. A slight discharge of blood from the vagina often occurs during this stage. It is caused by rupture of small capillary vessels due to contraction of the uterus, and is sometimes referred to as "the show."

In this stage the one essential feature is the dilating of the mouth of the uterus.

The patient may be up and about the room, or she may lie down, as she chooses.

She may partake of plain food.

It is not necessary for her to make any effort to "bear down."

The nurse should be present during the first stage and get everything in readiness for the actual delivery, and give such care and attention to the patient as may be needed.

Preparing for Labor

To prepare the patient for labor:

1. The bowels should be well moved, either by laxative medicine or by enema; if there has been constipation it may be well to administer both.

2. See that the bladder is empty (the patient may urinate or she may be catheterized under strict aseptic conditions. *Note:*—the nurse, however, should never catheterize unless the physician has given her specific instructions or permission to do so).

3. The patient should be given a general cleansing bath—scrubbing thoroughly with soap and warm water; a clean gown

should then be put on, folding it back carefully under the arms to protect it from becoming soiled or wet during the further preparation.

4. Some physicians will direct the nurse to shave the genital region; for this purpose either a safety razor or an old style razor may be used.

5. The nurse should now prepare herself by proper sterilization preparatory to rendering the genital region and neighboring parts as aseptic as possible; she should trim her finger nails short and evenly; scrub her hands and arms thoroughly with soap and warm water, giving special attention to the nails; rinse the hands and arms in sterile water and then with a sterile brush scrub the hands and arms in a bi-chloride solution of the strength of 1 to 2,000.

6. Give the genital region a thorough washing with sterile water, being careful to remove all discharges that may be

around and in the folds of the vulvo-vaginal orifice.

FIG. 1 — Diagram of Female External Genitals (Dickinson). From DeLee.

7. Then thoroughly rinse the surface of the body from the sternum, or breast bone, to the knees with a 1 to 2,000 bi-chloride of mercury solution—giving special at-

tention to the genital region; dry the parts with a sterile towel.

8. Now cover the abdomen and the thighs with sterile towels, pinning them together in such a way as to retain them in place, and place a sterile pad or sterile towel over the vulva, moistened with the bi-chloride of mercury solution on the side of the pad which comes in contact with the vulva; and instruct the patient not to allow her hands to touch any of the cleansed surfaces or parts. (In cleansing the genital region, the nurse should be careful never to allow a sponge, cloth or towel which has passed over the anal region to come in contact with the vulva, and every time the vulvar dressing is changed or the nurse finds it necessary to give any attention to those parts, she should thoroughly disinfect her hands.)

After this preparation, if the patient is allowed

to get up, the vulvar pad may be held in place with a " T " bandage.

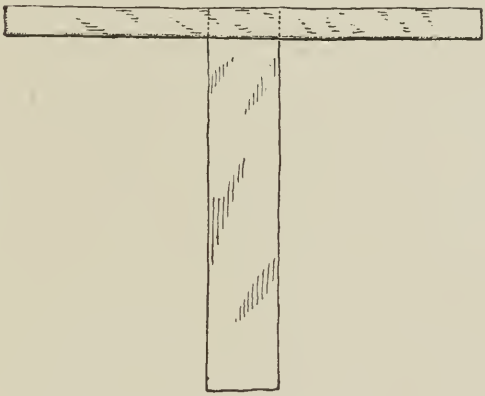

FIG. 2 — T-Bandage (Ashton).

During all stages of labor the nurse should be watchful for involuntary discharges from the bowel, and be prepared to remove them with absorbent cotton, paper napkins or other suitable material, and to do this in a way so that the discharges will not come in contact with and infect the vulvar region.

Some physicians may order a vaginal douche, especially if the woman has been having a leucorrhoea. Douches are not used as frequently as formerly owing to the danger of introducing infection, or to the possibility of forcing infected discharges farther up along the birth canal. Under no circumstances should the nurse administer a douche without specific instructions from the attending physician.

If the woman is up at any time during this stage, which is often desirable, she should wear in addition to the nightgown, warm stockings and slippers and a kimono, or other suitable over-garment, such as the weather and season may require.

Preparing the Bed

The mattress should be well protected. Use a piece of rubber sheeting (if that is not available, table oilcloth will do) long enough to cover the mattress, or at least a yard wide, and long enough to reach across the bed and hang down a few inches on each side. On top of this spread a sheet

covering the entire bed. Place on top of that another piece of rubber sheeting or oilcloth about three-fourths of a yard square, and over that a draw sheet; and on top of that a large pad about 3 inches thick and a yard square; this pad should be adjusted so as to come directly beneath the buttocks.

If neither the rubber sheeting nor oilcloth is obtainable, then use many thicknesses of newspaper.

The bed should be so situated in the room that the physician will have plenty of light and room for using instruments or for meeting any emergency that may arise.

General Preparation

Have at hand the following articles:—

Three basins (sterilized).

Two sterile hand brushes.

A large quantity of sterilized (boiled) water, both hot and cold.

Three pitchers (sterilized); two of the pitchers should be filled with water that has been boiled (sterilized) and allowed to cool (covered with sterile towels).

One or two slop jars.

One bedpan or a douche pan.

One sterile fountain syringe.

FIG. 3 — Showing a Sterile Towel Placed over the Top of a Pitcher and Secured with a Safety Pin.
All the pitchers used should be protected in this manner (Ashton).

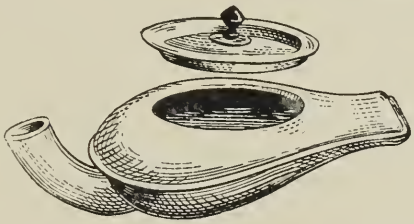

FIG. 4 — Bed Pan.

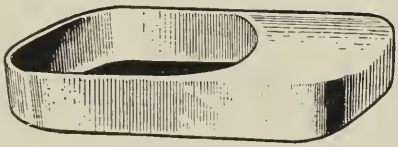

FIG. 5 — Douche Pan.

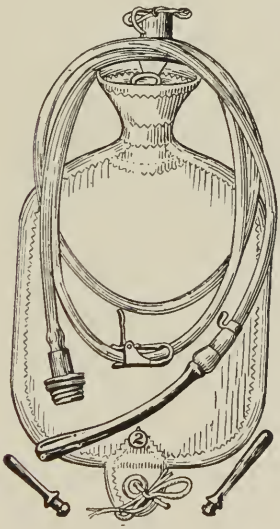

FIG. 6 — Fountain Syringe.

Some old sheets or muslin garments (sterilized) that may be torn into pieces and used as needed.

A quart of pure alcohol.

One ounce fluid extract of ergot—not to be given unless ordered by the doctor.

Some ointment such as olive oil, lard or sterilized vaseline.

Five yards of sterile gauze.

One or two pounds of sterile absorbent cotton.

A dozen sterile towels.

Three sterile sheets.

A quantity of sterile cotton or gauze sponges.

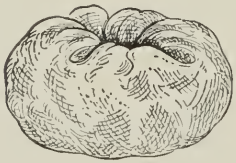

FIG. 7 — Illustration of Cotton or Gauze Sponge (Ashton).

One medicine dropper.

FIG. 8 — Medicine Dropper.

A pair of sterile rubber gloves.

One tall wide-mouth sterile bottle or jar, to hold a pair of long sterilized forceps (the points fully immersed in a 1 to 20 carbolic acid solution, or such solution as the doctor may suggest) for handing things to the doctor in case the nurse's hands are not sterile, and for handling the sterile gloves.

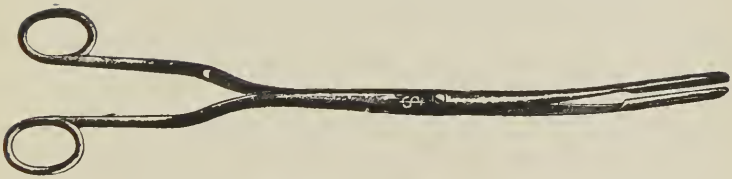

FIG. 9 — Forceps used in handing articles to the doctor.

Tablets of bichloride of mercury.

Lysol—two or three ounces. This is used in solutions of the strength of one to two per cent. $2\frac{1}{2}$ teaspoonfuls

to a quart of water makes about a one per cent. solution; five teaspoonfuls to a quart of water makes about a two per cent. solution.

One ounce of salicylic acid.

Three or four ounces of boric acid.

One medium sized flexible catheter (sterilized).

Two or three dozen vulvar pads (sterilized).

Sterilized tape for tying the cord.

Maternity stockings made out of cotton flannel, in general shape and size as ordinary stockings, but long enough to reach at least six inches above the knees; they should be made large enough to slip on easily.

A couple of small tables or stands, covered with sterile towels or sheets, for holding basins and supplies.

NOTE.—Articles, in an emergency, may be sterilized by steam in the following manner:—

Put a gallon or two of water in an ordinary wash boiler; the articles to be sterilized should be carefully and thoroughly wrapped in muslin bags or cloths and suspended above the water (thorough wrapping is essential to prevent too much moisture penetrating the bundles), put on the boiler cover, and boil slowly for thirty minutes. The articles should then be taken out of the boiler and without unwrapping them, place them in a moderately hot oven and allow them to dry out. The wrappings must not be taken off until the articles are needed for use.

Pitchers, basins and other utensils may be sterilized by boiling, using the wash boiler for that purpose also.

For small articles, a steamer such as is used for cooking purposes may be utilized as an emergency sterilizer.*

Rubber gloves may be sterilized either by boiling or by steaming, either method is effective, but

* Other methods of emergency sterilizing are given by the author in Text-book Series, Number 8, of "Nursing — the Heart of the Art."

the gloves will last longer if sterilized by steaming; twenty minutes is the time required for sterilizing by either method.

First wash the gloves both inside and out with soap and water and rinse thoroughly. Wrap the gloves, one on top of the other, in several thicknesses of gauze, allowing at least two thicknesses of the gauze to come between the gloves. Keep the gloves flat. Then wrap the package in at least two thicknesses of muslin, fold the open ends of the muslin over and pin securely, being careful not to allow the pins to touch the gloves. Place them in the receptacle for boiling or into the steamer and boil or steam for 20 minutes. If the gloves are to be used within an hour they need not be unwrapped until the doctor is ready to put them on, nor do they need to be dried. If a considerable period of time is likely to elapse before the gloves are to be used, having the hands sterile, the outer wrapping may be removed, being careful not to disturb the inside wrappings and the package placed in a suitable receptacle and dried

slowly, in an oven, which will, however, only require a short time (this drying process should be watched carefully so as not to burn the gloves). After being dried in this way the package may be wrapped in a dry sterile towel until the gloves are likely to be required. If a long period of time is likely to elapse between the sterilizing and the time the gloves are to be used, having the hands sterile, they should be powdered inside and out with sterile starch or sterile talcum power, then wrap them securely in several thicknesses of sterile gauze, the first wrapping having been sprinkled with the sterile powder, and then wrap the package in paraffin paper and seal securely with sealing labels, writing on the label "rubber gloves," mentioning the size.

In order to hasten the preparation of the gloves for immediate use, some physicians will direct the nurse to wrap them loosely in gauze after having thoroughly washed them with soap and water, boil for ten minutes and then place them directly without the gauze wrapping in a solution of bi-chloride

of mercury 1 to 5000, or in whatever disinfectant he may prefer for the purpose. The gloves may be put on directly from this solution.

FIG. 10—Method of Putting on Rubber Gloves. Note that the glove is distended with water (Ashton).

Modern Obstetrical Nursing

PREPARATION FOR THE BABY

PERSONAL PREPARATION

FITNESS OF THE NURSE

THE LYING-IN ROOM

THE SECOND STAGE OF LABOR

IMMEDIATE CARE OF BABY'S EYES

DRESSING THE STUMP OF THE CORD

THE THIRD STAGE OF LABOR

SERIES FORTY-ONE

Modern Obstetrical Nursing

By EUGENE UNDERHILL, M.D.

Author of A Text-book of Anatomy;
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Nursing
Underhill

The HOSPITAL Extension COURSE

Preparation for the Baby

Have a large warm blanket to wrap around the baby; have pieces of sterile gauze or pieces of soft muslin (sterilized) to wipe the baby's eyes, mouth and face.

See that all needed wearing apparel for the baby is ready for use, including napkins, shirts, slips, belly-band, safety-pins, etc.

Have at hand some nitrate of silver solution (a two-per-cent solution) for use in the baby's eyes. (One drop of this solution is to be used in each eye as soon as the baby is born.)

Have some boric acid dissolved in sterile water prepared, or a normal salt solution. (One of these solutions should be used to immediately flush the baby's eyes after the use of the nitrate of silver solution.)

Personal Preparation Fitness of the Nurse

The nurse should be clean in person; she should wear clean garments of a washable nature; she should not have been nursing any contagious disease within two weeks; she should have the idea of thorough cleanliness and asepsis uppermost in her mind; be determined and prepared as far as possible to carry out the doctor's orders to the letter; she should never for one moment even consider assuming the care of a case during labor unless a doctor has been engaged and called, or is in actual attendance; she should, however, be so acquainted with the duties of the nurse in the actual conduct of labor that in the event of the physician not arriving in time she may be able in the emergency to do the things actually needful in a manner which will meet his entire approval.

In the handling of medicines and solutions and in the use of all external applications, the nurse should be exceedingly careful. She should give good heed to the physician's directions regarding

the administration of medicines. Before giving medicine she should know positively that it is the medicine ordered by the physician—she should read the label both before and after she has poured out the medicine—don't wait to read the label until after the patient has taken the medicine and when it may be too late to correct criminal carelessness or forestall a fatal blunder.

In the preparation of solutions, the nurse should know exactly what she is doing in preparing them and know positively that the solution she is making is of the proper strength; if she has the slightest doubt on this subject, she should ask the physician for direction and guidance.

All bottles containing drugs should be properly and plainly labeled. If the label is lost or is illegible, do not proceed on a guess or an assumption that the bottle contains a substance which is for medicinal use, better reject it altogether—better lose the value of many bottles of medicine than to take chances with human life.

In the use of external applications, see that they are not too hot and that there is nothing about them that is likely to injure the patient—the wide-awake, careful and conscientious nurse will never burn her patient or in any way cause injury by the careless handling of materials of any kind.

The Lying-in Room

The room should be well ventilated, but should be quite warm when the child is born.

Fig. 11—Corner of a Lying-in Room in the Central Hospital of Philadelphia.

The room should be thoroughly clean and all articles not likely to be needed should be removed from it.

Everything about the room should be quiet, orderly and dignified.

THE SECOND STAGE OF LABOR

The second stage is recognized by the change in the character and frequency of the pains. They are of a bearing down character; they come every five or ten minutes and sometimes oftener. The pains are much more severe and last a longer time than those of the *first stage,* each pain often lasting for two minutes or longer.

The duration of the *second stage* is usually from one to two hours. It ends the moment the child is born.

The patient should be put to bed as soon as the *second stage* begins.

The nurse should then thoroughly and carefully wash the external genitals with soap and water and then rinse the parts with a 1 to 2,000 bichloride of mercury solution, if this has not been recently done as directed in the preparation for the *first stage* of labor.

The physician is usually present in this stage.

If the bag of waters in which the child floats does not break of itself, the physician will rupture it, thus permitting the water to flow out. When the water escapes, the uterus will gradually close against the child, each pain forcing the child downward a short distance.

The woman is encouraged to "bear down," and may be aided by pulling on the hands of an attendant or on a sheet fastened to the foot of the bed.

Immediate Care of Baby's Eyes

When the child is born, the nurse should immediately wash the eyes, nostrils and mouth, using

pieces of sterile gauze or cotton saturated with a solution of boric acid; then drop one drop of a two per cent. solution of nitrate of silver in each eye and immediately flush both eyes with a normal salt solution or with boric acid solution.

The nurse should have at hand a warm blanket ready to wrap the child in as soon as the physician cuts the cord or the nurse should cover the child before the cord is severed if for any reason the doctor delays the cutting of the cord.

The physician will usually promptly tie the cord in two places, cut between the ligatures, and hand the child to the nurse. If at this time the doctor requires the assistance of the nurse, or if the mother needs some special attention, the child may be carefully wrapped in a blanket and laid in a safe place with its eyes directed away from the light and on its right side with its head a little lower than the rest of the body (in order to favor the flow of the mucus out of the mouth and thus

tending to prevent the mucus from being drawn into the lungs) until the nurse is disengaged. The child is laid on its right side for the first day or two for the reason that it is thought that this position favors the closure of the *foramen ovale* (this is the opening between the auricles of the fetal heart, which should close at or immediately after birth). When the foramen ovale does not close promptly the blood is not properly aerated in the lungs and the child remains or becomes cyanotic or bluish in color; such children are called "blue babies." The condition is not necessarily fatal, but such children have poor resisting power and often die before reaching adult life. There is another condition called "atelectasis" to which the term "blue baby" is sometimes applied. Atelectasis means imperfect expansion of the lungs and is generally rapidly, and almost immediately, fatal.

Usually the nurse can proceed at once to anoint the child with warm lard, bathe with warm water and soap, dress the stump of the cord, apply the

belly-band, dress the child, and then lay it on its right side out of drafts, and protect with suitable covering.

Dressing the Stump of the Cord

If the physician does not prefer to dress the stump of the cord, and gives no direction to the nurse in relation thereto, the nurse should then proceed to dress the stump of the cord in the following manner:

The entire cord should be dusted thoroughly with a powder composed of one part salicylic acid to six parts cornstarch. Powder liberally around root of stump and on end of the stump as well as the sides. Make an aseptic pad of about four thicknesses of gauze. This pad should be about six inches long and three inches wide; cut a slit in one end of the pad one and a half inches deep, bring these cut edges of the pad around the cord in such a way that the cut edges of the pad will meet and allow the cord to rest on top of the pad,

which should lie flat on the abdomen, or a hole may be made in the center of that end of the pad and the stump of the cord very gently drawn through. Having adjusted the cord so it lies flat upon the pad, add more powder to the cord and the dressing, fold the other end of the gauze pad flatly and smoothly over the cord. Now apply a flannel binder or belly band, which should be pinned firmly and smoothly with small safety-pins at the side. This band should be pinned so it will not slip in the slightest degree or the cord may be injured.

When bathing the baby and the flannel band is removed, do not remove the aseptic pad from the cord, but gently lift the free edges of the pad, to see if the cord is doing well and dust on more of the salicylic acid and cornstarch powder, but under no circumstances should the dressing or pad be removed or water or moisture allowed to come in contact with the cord.

When the cord has fallen off of its own accord (usually in five days or less, or at least within two

weeks), the pad may be removed and the navel washed with sterile warm water; then apply another small aseptic gauze pad, after dusting on more of the salicylic acid and cornstarch powder, and apply the binder. The navel shall thereafter be washed, dried very gently and carefully, and dressed as often as is necessary to keep it clean, but be very careful in this washing of the navel not to irritate it.

Sometimes two pads three or four inches square are used instead of one long pad in the first dressing of the cord; one pad is applied by cutting a slit from the side to the center of the pad, or making a hole in the center and drawing the cord through, and the second pad laid on top; there is no objection to the use of two pads instead of one long one, except that the second pad is more liable to slip out of place, which cannot happen if one long pad is used and folded over, as directed.

Some physicians prefer the salicylic acid and cornstarch powder to be mixed in the proportions

of one part salicylic acid to four parts cornstarch or one part salicylic acid to five parts cornstarch.

Boric acid and cornstarch is occasionally used instead of the salicylic acid and cornstarch in the proportions of one part boric acid to six parts cornstarch.

Some physicians prefer not to have any powder used in dressing the cord.

Alcohol, full strength, is sometimes applied to the cord instead of powder.

Fuller's earth is occasionally used, but the nurse should never use it unless it is ordered by the physician.

Talcum or other ordinary toilet powders should not be used.

Whatever powder or dressing may be used, it is important to remember that the process of healing should not be interfered with by allowing

moisture to come in contact with the cord or with the dressings.

If in any case the cord does not appear to be doing well, the circumstance should be brought to the attention of the physician, and his directions solicited as to the proper care and management.

THE THIRD STAGE OF LABOR

The third stage of labor, requiring about twenty minutes, is managed by the doctor and is usually in progress while the nurse is washing and dressing the child.

The third stage is the delivery of the afterbirth, or placenta.

After a few pains, the afterbirth is delivered. The nurse then proceeds to wash the mother, and remove all soiled bedding and clothing and applies an aseptic napkin or vulvar pad.

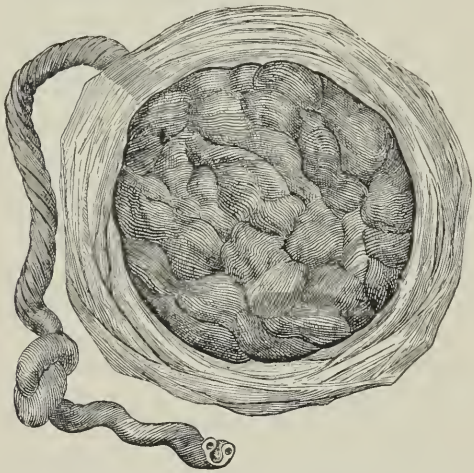

FIG. 12—Human Placenta, Uterine Surface (Tarnier). From Dorland.

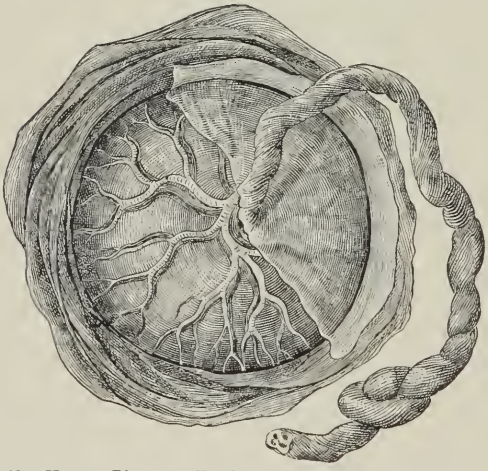

FIG. 13—Human Placenta, Fetal Surface. The amnion is dissected off one side to show the vessels (Tarnier). From Dorland.

An abdominal binder is then applied. A large pad is placed over the lower part of the abdomen; then the binder is tightly applied and held in place by safety-pins. After the binder is pinned in at least three places it is a good plan to remove the first pin and draw a little tighter and so on with each pin—however, pinning more closely, using several safety pins so as to make a uniformity of pressure. Pin in such a way as to prevent slipping. A large towel folded lengthwise, or a suitable length of strong muslin, 8 to 10 inches wide, will make a serviceable binder. The purpose of the binder is to exert pressure on the uterus and abdominal walls. No part of the binder should extend over the ribs, as this would interfere with respiration and prevent drawing the binder as tightly as it should be applied. A properly applied binder adds greatly to the patient's comfort, aids in keeping the uterus contracted and thus tends to prevent hemorrhage.

All the discharges and soiled garments should be removed from the room as quickly as possible, and the mother covered warmly and encouraged to rest and sleep.

Modern Obstetrical Nursing

OBSTETRICAL EMERGENCIES

MANAGEMENT OF LABOR IN THE ABSENCE OF THE PHYSICIAN

SERIES FORTY-TWO

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By EUGENE UNDERHILL, M.D.

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Obstetrical Emergencies

MANAGEMENT OF LABOR IN THE ABSENCE OF THE PHYSICIAN

Probably the most serious obstetrical emergencies that may arise are in connection with the responsibilities that will fall upon the nurse in the event of a doctor not being obtainable, or in case the doctor who has been engaged does not arrive in time.

While a nurse should never make an engagement for, or seek an opportunity to deliver a woman on her own responsibility, yet if the necessity arises she ought to be so familiar with the essential duties to be performed that she may confidently and resolutely conduct the labor to a successful issue.

It is with this thought in mind that clear, easily understood descriptions and illustrations of the

actual requirements for the successful conduct of labor are here given, and not with any idea of minimizing the necessity and importance of having a skilled physician in attendance.

It has therefore seemed best to group together the essential facts and to give in detail the practical management of labor from the beginning of the *first stage* to the end of the *third stage* and the immediate after-care of the mother and child.

If the symptoms of the *first stage* of labor are present and the birth of the child seems imminent, after having prepared the bed and the room and brought together such materials as are likely to be needed, the mother should be put to bed.

If the child is likely to be born in a very short time, this fact can generally be ascertained by a digital examination. For this examination the mother may be placed in the dorsal position, or in the Sims position. (See Figs. 14, 15 and 16.) The external genitals should be thoroughly cleansed. The nurse should properly disinfect her hands by

scrubbing with soap and water and rinsing in bichloride of mercury of the strength of 1 to 2,000. Put on a pair of sterile rubber gloves, if they are available, and having lubricated the fingers with vaselin, introduce the first and second fingers well up into the vagina. If the head is encountered within the length of the fingers, the birth of the child may be expected at any time.

In some cases, however, the head may descend slowly, and even after it reaches the perineum, delivery may be prolonged. This examination is not ordinarily essential and should not be made unless there is some good reason for it, but the method is given so that the nurse may know how to proceed should it seem necessary for her to know how soon to expect the birth of the child.

There is always more or less danger of introducing infection into the birth-canal during such an examination. It is for this reason that examinations should only be made when it is absolutely necessary.

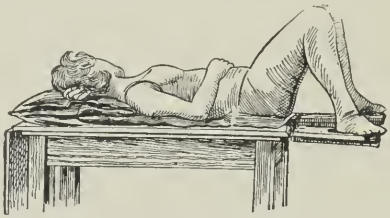

FIG. 14 — Dorsal Recumbent Position (Dorland)
The patient may be arranged crosswise of the bed in this position.

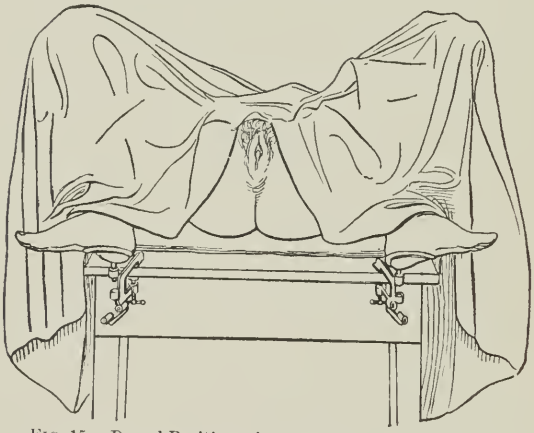

FIG. 15 — Dorsal Position with the Sheet Draped to Expose the Vulva (Ashton).
The patient may be arranged crosswise of the bed in this position.

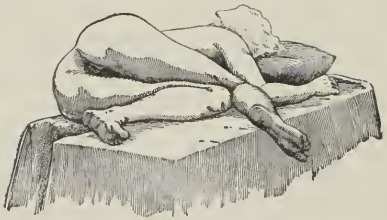

FIG. 16 — Sims' Position, Anterior View (Dorland).
A sheet should be draped over the patient to expose only the vulva.

A safer method of examination and to be preferred is a digital examination per rectum; lubricate one finger and inserting it gently into the rectum, press up firmly against the perineum and extend the finger up into the rectum as far as is possible. if the head is felt through the rectal wall, the birth of the child is imminent.

As soon as it is ascertained by examination or otherwise, that the child is about to be born, the mother should be placed on the left side with the buttocks quite near the edge of the right side of the bed (the mother's right), with her head and upper part of her body extending toward the left side of the bed. Have her knees drawn up or flexed so that the thighs are nearly at right angles with the body. Have the right knee drawn up a little farther than the left knee. Place a firm pillow between the knees. This position is called the *left lateral* or *obstetrical position.* (See Fig. 21.)

After having placed the patient in position, adjusted the oilcloth, rubber sheeting, or Kelly pad

(See Figs. 17, 18 and 19), if one is available, and pads to protect the bed from the discharges, and having within easy reach such materials as will be needed, the nurse should again disinfect her hands and put on the rubber gloves. (If an examination was made and the gloves worn, the nurse should have washed the gloves thoroughly before she removed them from her hands and placed them in a solution of bichloride of mer-

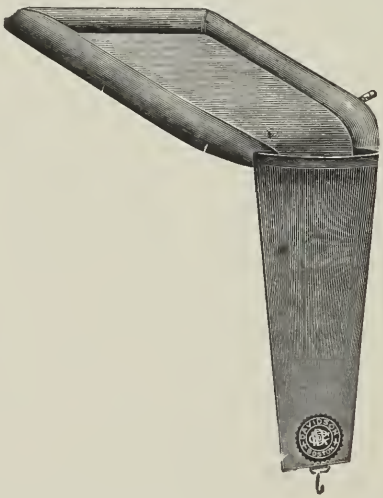

Fig. 17—Kelly Pad. This is used for protecting the mattress or bed, and for drainage during operation and in delivery. The Kelly Pad is also made without the square corners and in shape very similar to Ashton's Substitute. See Fig. 19.

cury of the strength of 1 to 2,000, where they should have remained until she is ready to put them on for actual delivery.) After putting on the gloves the hands should be dipped in sterile water to wash off the bichloride solution.

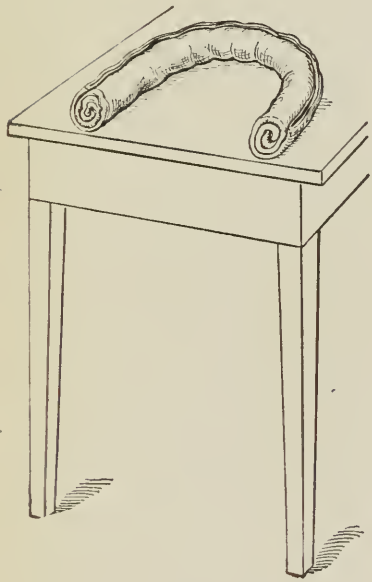

Fig. 18.

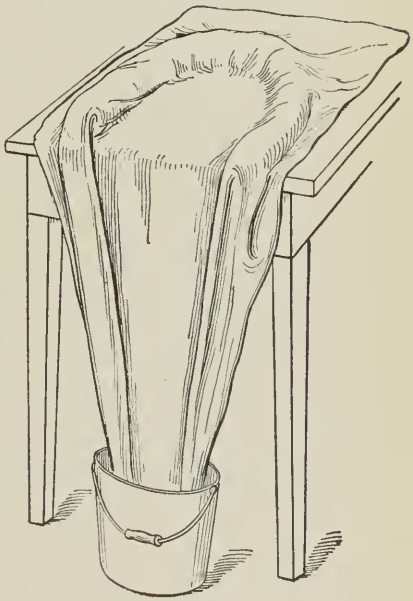

Fig. 19.

Ashton's Substitute for the Kelly Pad. Showing the method of folding the bath towel (Fig. 18) and the position of the rubber sheeting (Fig. 19). Ashton's "The Practice of Gynecology."

Now the nurse should take her position on the right side of the bed (the mother's right) and as soon as the head appears to be presenting at the vulva, she should pass her left hand around in front of the abdomen, extending her hand between the thighs until the fingers reach the vulva. (See Fig. 22.) The object of this position of the left hand is to be prepared to strip back the vulvar tissues over the child's head.

The right hand should be held near the perineum ready to retard the descent of the head to prevent the too rapid stretching of the perineum. The descent of the head should be retarded in this way at least during three strong pains. This is important as a precaution against the laceration or tear of the perineum. When the head is retarded in this way, pressure should be applied to the head with the palm of the hand and not with the fingers. This is very important—applying the palm of the hand distributes the pressure; using the fingers to retard the head might do great damage by pressing upon the anterior fontenelle.

If in spite of this pressure the head is descending too rapidly and it appears that the perineum is about to be torn, the mother should be instructed not to bear down and to open her mouth and breathe in quick, short (panting) inspirations and expirations, the nurse still retarding the head with the palm of her hand.

After the head has been thus retarded during at least three strong pains, if the perineum appears to be sufficiently distended and the tissues do not appear to show any evidence of tearing, at the next strong pain the tissues may be stripped back over the head of the child. If, however, the perineum does not appear to be sufficiently distended, the head should be retarded for a longer period. (See Figs. 23, 24, 25.) The distention of the perineum may sometimes be favored by the application of hot fomentations.

As soon as the head is born (See Fig. 26), *restitution* takes place (See Fig. 27), which means that the head turns normally until the face of the

child is directed upward toward the mother's right thigh; that is, toward the ceiling; or downward toward the mother's left thigh, depending upon the presentation or position which the child occupied in the uterus.

Probably the majority of physicians allow the head to be born *between* pains, but there is one great advantage when the nurse is delivering in allowing the head to be born *with* a pain, and that is, that the head is forced out further during the pain, which permits of more prompt and certain restitution and gives an opportunity to quickly ascertain whether or not the cord is around the child's neck.

After the head is born feel around the back of the child's neck for the cord, and if it is encountered, very gently pull it up over the child's head.

The nurse should now stand facing toward the head of the bed, and with the left hand grasp the head of the child beneath the occiput, extending

the fingers to both sides of the neck. With the right hand grasp the child in the same way, but beneath the chin, and pull toward the mother's thighs or toward the opposite side of the bed, this movement delivers one or both shoulders; continue pulling in this way, but carrying the child between the mother's thighs and in the direction of the mother's abdomen until the child is completely born. If this movement only delivers one shoulder the child should then be pulled in exactly the opposite direction to free the other shoulder, then carry up toward the mother's abdomen until the child is completely born.

Now place the child on the side of the bed at the mother's back, with the head of the child in the same direction as the mother's. (See Fig. 28.)

Give the mother one teaspoonful of the fluid extract of ergot. Then if the child is breathing, which is usually evidenced by a lusty cry, the nurse should immediately wash the eyes, nostrils, and mouth, using pieces of sterile gauze or cotton

saturated with a solution of boric acid; then put one drop of a two per cent. nitrate of silver solution in each eye and immediately flush the eyes thoroughly with boric acid solution or normal salt solution. It is important to have the boric acid solution or the normal salt solution flush the eyes freely after the use of the nitrate of silver, as the action of boric acid or salt solution neutralizes the nitrate of silver and prevents it from acting too deeply. (The nitrate of silver solution is used for the purpose of destroying any infection that may be in the eyes which would have a tendency to ruin the child's sight. In some States the care of the new born child's eyes in this way is a legal requirement, and its importance is realized when the fact is known that one-fourth of all cases of blindness are due to carelessness in cleansing and disinfecting the eyes at the time of birth.)

Tie the cord with sterile tape or thread, three fingers breadths from the child's abdomen, using the surgeon's knot.

This knot must be tied tightly and so it will not slip; to make sure that it cannot slip, it is a good plan to pass the tape or thread around once or twice more and tie again. Then tie another ligature two or three inches beyond the first ligature toward the mother in the same manner. Sever the cord with the scissors between these two ligatures. (See Fig. 28.) One ligature prevents bleeding from the child and the other from the placenta in case there should be twins.

FIG. 20 — Method of Tying Surgeon's Knot.
Da Costa — "Modern Surgery."

Wrap the child in a warm blanket, place it in a safe place on its right side with its eyes directed away from the light and its head a trifle lower than the rest of the body, and give immediate attention to the mother.

Remove the pillow from between the legs and turn the mother in the dorsal position. While turning to the dorsal position, the legs should be kept close together to prevent the possibility of air being drawn into the vagina and thence into the large veins of the uterus, where an air *embolus* or air bubble (air embolus signifies an air plug or cork) may be formed in one or more of the uterine veins; this might prove a serious circumstance and can even cause death.

After turning the patient to the dorsal position the nurse should stand on the left side of the bed (the mother's left); with the right hand firmly grasp the mother's abdomen to compress the uterus and favor its contraction. (See Fig. 29.) Repeat the compression of the uterus at frequent intervals. Compress or squeeze the uterus thoroughly as if it were an orange. This is called Credéing the uterus. To Credé the uterus is extremely important in order to prevent post-partum hemorrhage.

It is a good plan to place a clean sheet or large towel beneath the buttocks, so as to be able to know immediately by frequent glances at the sheet or towel, whether or not the patient is having a hemorrhage. She should also watch the patient for symptoms of hemorrhage; the most common symptoms at this time are: pallor, lips become bloodless, cold sweat, rapid respiration, frequent sighing or yawning, and sometimes pain about the heart and complaints of dizziness. If any of these signs are present, further and vigorous Credéing of the uterus is essential.

Wait 15 or 20 minutes from the time the child is born before delivering the placenta or afterbirth.

To deliver the placenta, press the fingers of the right hand well down into the mother's abdomen behind the uterus. (See Fig. 29.) This allows the main part of the uterus to come beneath the palm of the hand, and the thumb should extend in front and to one side of the uterus. Squeeze and push

down and deliver the membrane slowly to avoid tearing.

In delivering the membranes or placenta it is good practice to hold the cord in the left hand so as to be able to note the progress which is being made, being very careful, however, to avoid traction or pulling upon the cord. (See Fig. 29.)

To ascertain when the afterbirth is in the vagina, stretch the cord gently with one hand and allow the first finger of the other hand to follow up the cord into the vagina. If a large mass of flesh attached to the cord can be felt lying just within the vulva, then it is in the vagina and ready to be delivered.

Stretch the cord gently with one hand and with the other hand work the mass of the afterbirth downward until it is partly extruded, then drop the cord, and, with both hands, carefully, remove the afterbirth and attached membranes. (The placenta comes out like an inverted umbrella, the cord representing the handle.)

If it is necessary to exert traction or pulling upon the structures to remove them from the vagina they should be turned around gently several times in one direction, thus forming a rope of the membranes. This permits gentle pulling without as much liability to damage.

After the placenta and attached membranes are delivered they should be carefully inspected to see if they are intact (complete) and that no portion of the membranes is left in the uterus or vagina. The portion of the membranes to be inspected is the part which has been attached to the uterus, and that portion is opposite to the side to which the cord is attached. (See Fig. 12.)

Smooth out the membranes, which will cause them to assume a shape similar to a cake. (The word placenta means "a cake.") The side to which the cord is attached is smooth, shiny, and gray in color, and is very rarely torn. (See Fig. 13.) The other side is rough, red and granular in appearance. It is this side which must be very

carefully inspected to see that no part of it has been torn off. If it has not been torn the surface appears uniform and unbroken. (See Fig. 12.)

If the placenta appears to be torn, the doctor must be apprised of the fact and the placenta saved for his inspection.

While the *left lateral position* is the most correct position for delivery, some patients will insist upon lying on the back with the knees drawn up and separated (dorsal position. See Figs. 14 and 15.) The method of delivery and the precautions to be taken are the same as in the *left lateral position.* The patient may also be placed in the *right lateral position* and delivery effected in the same way as in the *left lateral.*

Modern Obstetrical Nursing

PROGRESS OF LABOR—DELIVERY ILLUSTRATED

DELIVERY IN BREECH PRESENTATION

SERIES FORTY-THREE

Modern Obstetrical Nursing

By EUGENE UNDERHILL, M.D.

Author of A Text-book of Anatomy;
Infectious Diseases and Their Management;
Nursing—The Heart of the Art;
The Graces of the Nurse;
Sick-room Care and Practice, etc.

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Nursing

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The HOSPITAL Extension COURSE

NOTE: The following photographs, showing the beginning and progress of labor, were taken in The Central Hospital of Philadelphia by Miss Lillie Frazier, superintendent of the Philadelphia School for Nurses.

These photographs show in detail the actual requirements and duties of the nurse in the scientific management and practical conduct of labor in the absence of the physician.

The instruction given in the preceeding text dealing with the various stages of labor, and the actual management and care of the mother and child should be carefully and thoroughly studied in connection with these illustrations.

FIG. 21.

This photograph shows the nurse prepared and ready for actual delivery.

When it becomes apparent from the character of the pains and other symptoms, that the birth of the child is imminent, the patient is properly prepared for labor, the obstetrical stockings drawn on and the patient placed in the left lateral or obstetrical position, with her back toward the nurse, as here shown. Note that a pillow is placed between the thighs, and the entire body is covered or draped with a sheet, exposing only the vulva and parts immediately adjacent. Of course, if it is cold or cool weather, a blanket should be placed or draped over the sheet to keep the patient comfortably warm.

The bed should have been properly prepared and suitable protective material placed under the patient's buttocks. It will be observed in the photograph that a Kelly pad was used; such facilities, of course, are available in a hospital, but the resourceful nurse, however, can always improvise suitable substitutes in a home. Rubber sheeting, oil cloth and even newspapers can be made to take the place of a Kelly pad.

With the bed and the patient prepared, sterile towels, gauze, solutions for properly cleaning and disinfecting the child's eyes, and all other materials likely to be needed placed within easy reach, the nurse should again disinfect her hands, put on a sterile gown and head-dress, then disinfect her hands again and draw on sterile rubber gloves as shown in the photograph.

The nurse is now ready for actual delivery. She should encourage the mother while awaiting the appear-

ance of the child's head at the vulva. As soon as the appearance of the child's head seems imminent, which will be apparent from the bulging or stretching of the perineum and other parts during a severe pain, the nurse should take her position as shown in the next photograph.

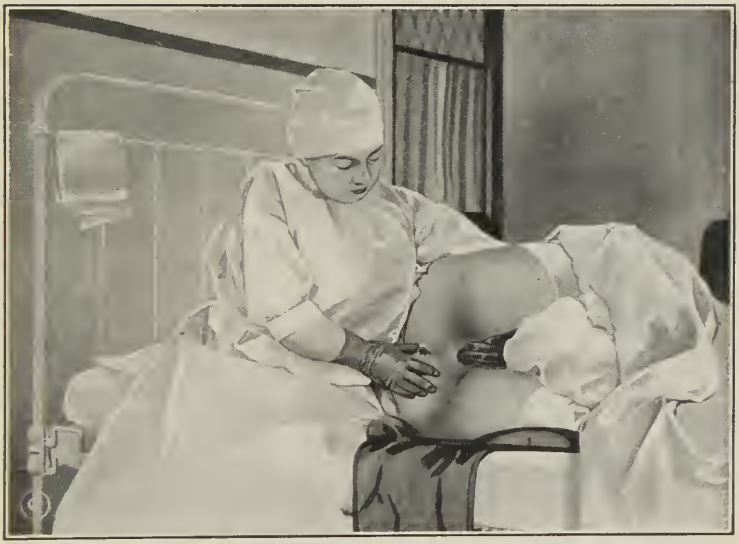

Fig. 22.

This photograph shows the nurse at the beginning of actual delivery.

It will be observed that the head of the child is causing a stretching or bulging of the perineum.

The nurse sits with her back toward the head of the bed and passes her left hand around in front of the abdomen and between the thighs until her fingers reach the anterior (front) portion of the vulva. She places her left hand in this position so as to be ready to strip back the tissues over the child's head with her fingers as soon as the parts are sufficiently dilated and the condition of the parts makes it seem wise to allow the child's head to be born.

It is also desirable to have the left hand in this position to aid in retarding the descent of the head if it appears that the tissues are about to be torn.

The right hand is also held in readiness to promptly retard the descent of the head if it seems necessary. Care should be exercised not to allow the right hand to come in contact with the anal region. (Owing to the position of the camera, the nurse's thumb in this photograph appears to be very near the anal orifice, but as a matter of fact her whole hand was held at some little distance from the patient's buttocks, but in readiness to aid in retarding the head should it become necessary).

The next photograph shows one method in retarding the descent of the head.

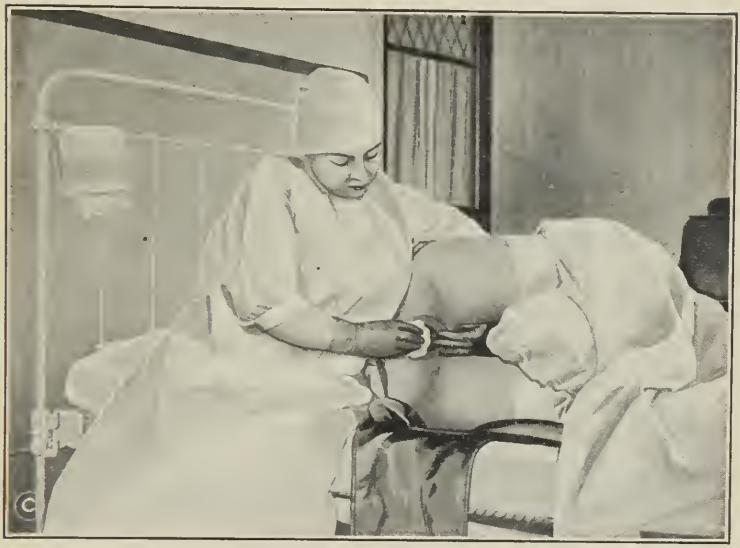

Fig. 23.

This photograph shows the child's head presenting at the vulva and the parts considerably dilated, but not sufficient to allow the child's head to be born.

The nurse is exercising slight pressure to retard the descent of the head during a very strong pain. It will be observed that she has a large pledget of cotton in her hand, which she is gently pressing against the child's head. Pressure should never be brought directly against the child's head with the fingers, as great damage might be done by pressing against the anterior fontenelle. Very strong pressure should never

be brought to bear even with a large pledget of cotton, as shown in the photograph. Had very strong pressure been necessary, the nurse would have discarded the pledget of cotton and retarded the child's head with the palm of her hand. This permits of a wider and more even distribution of pressure, and guards against any possible damage.

The next photograph shows the condition of the presenting head and the vulvar and perineal tissues after a strong pain has subsided.

Fig. 24.

This photograph shows an interval between pains.

It shows also that the parts are not sufficiently dilated and that it was necessary to retard the head during the preceding pain in order to prevent tearing of the perineum.

The nurse is shown carefully watching the situation and ready to again retard the descent of the head until such time as the condition of the parts makes it apparent that it will be safe to allow the head to be born without danger of laceration.

Should it appear that the parts are about to be torn during a very strong pain, the nurse, in addition to retarding the descent of the head with a large pledget of cotton, or preferably with the palm of the hand, would direct the patient to open her mouth and breathe in quick, short inspirations and expirations.

Between the pains she may also apply hot fomentations to the perineum to favor stretching of the parts, and thus prevent laceration.

After favoring dilatation of the parts as much as possible and retarding the head during pains until it seems safe to allow the head to be born, the nurse then endeavors to strip back the tissues over the child's head with her fingers as shown in the next photograph.

Fig. 25.

In this photograph, the tissues are shown widely dilated. The stretching is so great that the edges of the tissues next to the child's head, as may be noticed in the photograph, appear to be almost white. With her fingers, the nurse is endeavoring to strip back the tissues over the child's head, but she holds a large pledget of cotton in her right hand ready to again retard the head should she notice evidences of a beginning laceration.

As soon as it is apparent that the head will be born during a strong pain, and that the tissues will not be torn, she drops the pledget of cotton, and, with the fingers of both hands quickly strips the tissues back over the child's head.

The next photograph shows the birth of the child's head.

Fig. 26.

This photograph shows the child's head at the moment of birth. It also shows the nurse cleansing the

child's eyes and mouth during restitution. Restitution takes place immediately; it means that the child's head turns so its face will be directed upward toward the mother's right thigh (toward the ceiling) or downward toward the mother's left thigh (toward the floor), according to the position which the child occupied in the uterus. In the majority of instances, restitution takes place toward the mother's right thigh.

The next photograph shows restitution complete and the birth of the shoulders.

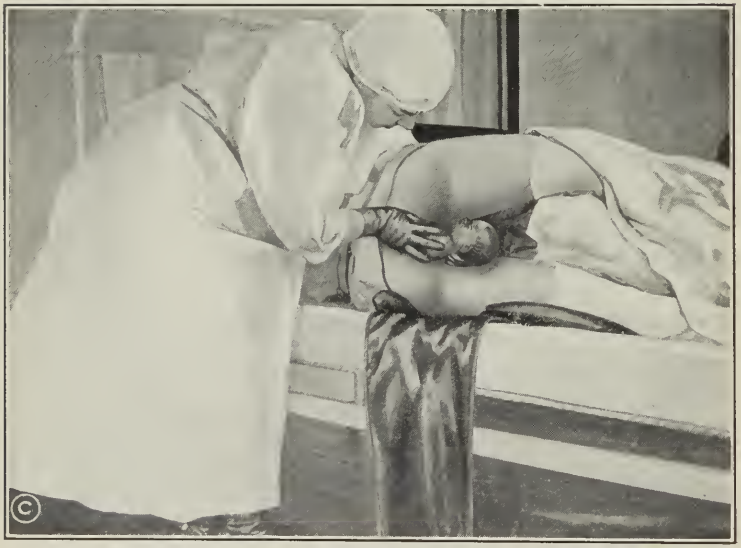

Fig. 27.

This photograph shows that complete restitution has

taken place and that the nurse is guiding the birth of the shoulders, which is occurring spontaneously.

It will be observed that the nurse's left hand is still around in front of the mother's abdomen and between the thighs and under the child's head and neck, and her right hand against the child's shoulder.

With both hands she is carrying the head and shoulders around between the thighs in the direction of the pubis, to favor the birth of the child's body. The carrying of the child in this direction is important, as it tends to prevent laceration of the perineum by the after-coming body.

Had the birth of the shoulders not occurred spontaneously, the nurse would have changed her position so that her back would have been toward the foot of the bed. With one hand she would have grasped the child beneath the chin, and with the other beneath the occiput (back part of the head), and pulled steadily but forcibly, as she carried the child's head between the thighs in the direction of the pubis. This movement would very likely free both shoulders, and she would have continued to carry the child up in the direction of the mother's pubis or abdomen until it was completely born. If when she first began to pull on the head and carry it in the direction of the pubis or

abdomen, that movement only freed one shoulder, she would then have carried the child in the opposite direction, until the other shoulder was freed, and then carry the child between the mother's thighs in the direction of the pubis or abdomen until the child was completely born.

The next photograph shows the child completely born.

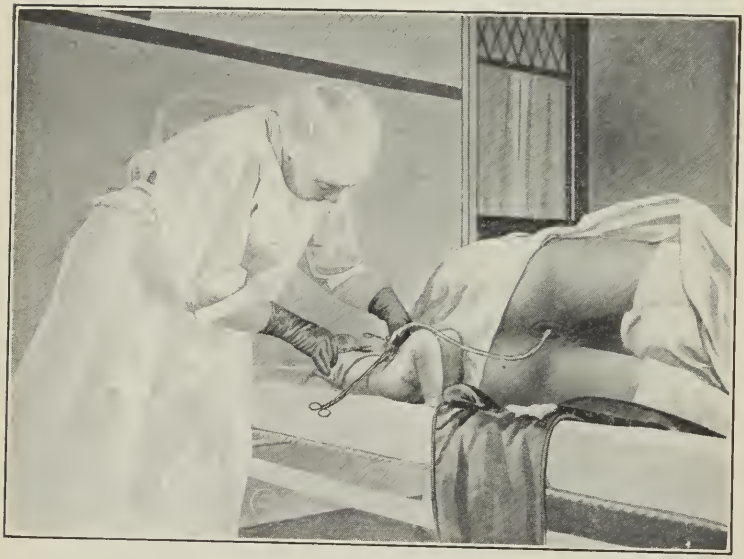

FIG. 28.

This photograph shows the child completely born and the nurse in the act of cutting the cord.

It will be observed that the nurse laid the child alongside the mother's back, with the child's head toward the head of the bed. This was done in order to place the child away from the discharges.

Before cutting the cord, if the mother shows a tendency to hemorrhage, she is often given a teaspoonful of ergot, and the nurse immediately grasps the mother in the abdomen to favor the contraction of the uterus, and thus prevent hemorrhage.

The mouth and eyes of the child are cleansed and the eyes properly disinfected before cutting the cord.

In the photograph it will be observed that the nurse has clamped the cord in two places with hemostats or artery forceps, and holding the cord with her left hand, she is in the act of severing the cord between the forceps with a pair of scissors.

It is not necessary to use the forceps to clamp the cord in this way, but in hospitals or where such instruments are available, they are often used for this purpose. Tying the cord in two places in the usual way and severing it between the two ligatures would have answered every purpose.

If forceps are used, the cord should be tied between the child and the forceps nearest the child. The part of the cord next to the mother need not be tied if

forceps are used, but they should be left on until the placenta is delivered or until it is ascertained that there is not another child in the uterus. The hemostats or artery forceps are handy instruments to have in case the mother has a hemorrhage before the nurse has time to tie the cord; the hemostats can be quickly clamped on, thus permitting the nurse to give more immediate attention to the mother.

After the cord is severed, the child is wrapped in a warm blanket and placed in a safe place on its right side, with the head a little lower than the rest of the body, and the nurse gives immediate attention to the mother.

The pillow should be removed from between the mother's thighs, the legs brought close together, and the patient turned on her back. Some physicians turn the mother on the back before severing the cord.

The next photograph shows the patient turned on her back and the nurse beginning the delivery of the placenta.

Fig. 29.

This photograph shows the nurse Credéing (kneading) the uterus and beginning the delivery of the placenta.

Observe that the nurse holds the cord very lightly in her left hand without exerting any traction or pulling upon the cord, but it enables her to note what progress is being made in the delivery of the placenta.

As soon as the placenta is expelled from the uterus the uterus usually contracts more completely and can be felt to become noticeably smaller.

If at this time the placenta is not protruding externally, it can be felt just within the vaginal orifice, and the nurse may very carefully remove it with the hands.

After delivery of the placenta, the nurse should remember to examine it critically to see that no portion of it has been torn off and left in the uterus, and in case it does not appear to be wholly intact, to save it for the doctor's inspection.

METHOD OF DELIVERY IN BREECH PRESENTATION

In over 95 per cent. of all cases the head is normally the presenting part.

In between two and three per cent. of all cases the *breech* or *buttocks* is the presenting part.

The method of delivery in a *breech presentation* is as follows:

As soon as the breech appears at the vulva, put the mother in the dorsal position across the bed

with her feet on chairs, the legs separated and the hips extending a little over the edge of the bed.

When it is apparent that the breech is about to be born, the nurse should lay a warm sterile towel over the palm side of her left arm, the towel extending from the palm of her hand to the bend of the elbow; when the breech and body of the child is born let the body rest on the towel on the arm of the nurse, and as soon as the child's arms are delivered, the nurse should extend two fingers of her left hand up into the child's mouth; with the right hand she should press down on the head of the child through the mother's abdomen and at the same time with the left hand pull outward and upward in the direction of the pubis until the head is born. In some instances it is necessary to exert considerable pressure on the head through the abdominal walls and rather forceful traction with the left hand and fingers. When this is necessary the nurse will need courage and resolution, but she can succeed in delivering the head if she has a sufficient amount of determination.

After the breech is born she should aim to deliver the head in *one minute;* the child will probably live if the head is born within three minutes, but an effort should be made to deliver the head in *one minute* in order to make certain that it is delivered in three minutes.

In the great majority of cases the head is delivered with very little trouble, but the nurse should be prepared to work with great precision and quickness if it is required. The reason that the head must be delivered quickly after the breech is born is due to the fact that the exposure of part of the child's body sets up attempted respiration, and if the head is confined longer than three minutes the child will likely be *still-born* (dead).

Sometimes a leg will present first or simultaneously with the breech; in such a case, pull on the leg and deliver the same as in an ordinary breech presentation.

If a hand presents first, push up the hand and allow the head to be born the same as any ordinary head presentation.

Modern Obstetrical Nursing

DYSTOCIA

PROLAPSE OF THE CORD

TO ESTABLISH RESPIRATION

POST-PARTUM HEMORRHAGE

CAESAREAN SECTION SYMPHYSIOTOMY

PLACENTA PRAEVIA

SERIES FORTY-FOUR

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By EUGENE UNDERHILL, M.D.

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DYSTOCIA

Dystocia signifies difficult labor.

Dystocia may be caused by:

Excessive fatigue just before or at the time of labor.

Deformities of the pubis.

Rigid cervix (especially in primipara).

Tumors.

Over-distention of the uterus.

Extra large child.

Abnormal position of the child in the uterus.

Many previous labors which resulted in tears and consequent formation of scar-tissue, which prevents the uterus from properly contracting.

The symptoms are:

Pains during labor are weak and infrequent.

The uterus is not hard during pain as it should be.

There is no progress.

In such cases labor is prolonged and after allowing a sufficient time the child may be born. Many such cases, however, may require the use of forceps.

In all cases after a forceps delivery the mother should be especially guarded against taking cold. If the mother perspires freely, she may be rubbed with warm salt and water, with warm water and alcohol, or with warm salt water and alcohol.

The child should be kept especially warm, as it suffers somewhat from shock after forceps delivery.

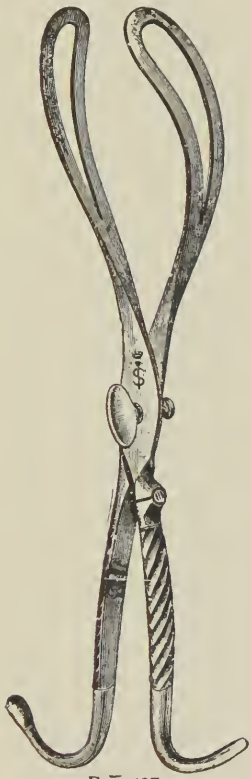

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FIG. 30 — Delivery Forceps.

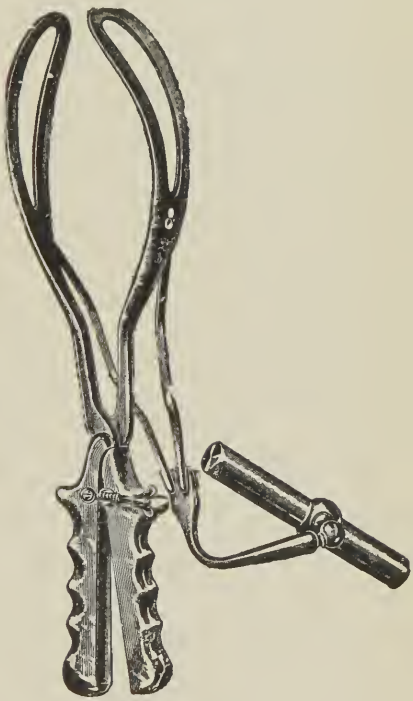

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FIG. 31 — Delivery Forceps with Axis Traction.

PROLAPSE OF THE CORD

In rare instances prolapse of the cord occurs; that is, the cord appears at the vulva before the child is born. This is a serious omen for the child, but not dangerous to the mother.

When this emergency occurs the doctor should be sent for at once. Meanwhile put the patient in the Trendelenberg position (See Fig. 32) on a chair in bed, or in the knee chest position (See Figs. 33 and 34), and with the hands sterile, wash the cord with warm sterile water and gently replace it in the vulva; keep it there by holding the vulva together or by holding a warm sterile towel over the vulva. Under no circumstances should the cord be allowed to protrude externally, as such a position of the cord tends to cause the pulsations in the cord to cease and thus to jeopardize the life of the child. If the pulsations have ceased when the prolapse of the cord is first noticed, the probabilities are that the child is dead.

If the mother is placed in the knee-chest position, and is kept in that position while waiting for

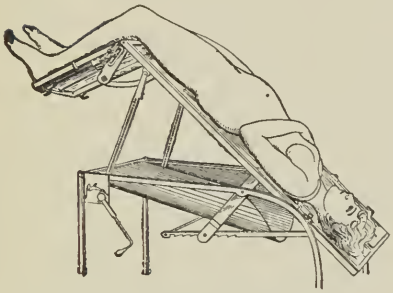

FIG. 32 — Trendelenburg Position (Ashton).—American Illustrated Medical Dictionary (Dorland).

This position may also be secured by turning a chair upside down in bed ; the patient's head resting upon the bed, the back of the chair supporting the trunk and thighs, the feet and legs extending over the lower rungs of the chair. Patient to be kept covered.

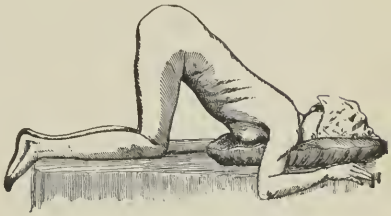

FIG. 33—Knee-Chest, or Genupectoral, Position. —American Illustrated Medical Dictionary (Dorland).

FIG. 34 — Knee-Chest Position with the Sheet Draped to Expose the Vulva (Ashton).

the doctor she will soon tire unless properly supported; this can be accomplished by placing firm pillows beneath the abdomen, of such size and number as will permit her to rest upon the pillows while maintaining approximately the knee-chest position.

When the doctor arrives he will likely deliver with forceps, but if the birth of the child seems imminent and the doctor's arrival is likely to be long delayed, the mother should be placed in the obstetrical position and rapid delivery favored; if, however, the doctor can be expected within a reasonable time the nurse should keep the mother as quiet and comfortable as possible, making sure that the cord is retained within the vulva and await the physician's arrival.

TO ESTABLISH RESPIRATION

If the child should show little or no signs of life, then measures should be adopted to establish respiration.

The use of hot and cold water, alternately applied to the spinal column and chest is sometimes tried.

If this does not succeed, quickly tie and cut the cord, and holding the child by the feet, with the head down, give a few gentle slaps on the buttocks or chest, which will usually start up respiration.

Blowing directly into the child's mouth will often clear the respiratory passages of mucus and start natural breathing. Lay a piece of folded gauze over the child's mouth; put your lips directly against this gauze, and blow into the mouth.

Artificial respiration may be employed in serious cases. To perform artificial respiration on an infant, see that the mouth is first cleared of mucus, and then with the child lying on a smooth surface, carry both arms well up over the head and then down to the surface of the abdomen, exert gentle pressure upon the abdomen and then repeat these movements fifteen times a minute.

Another method of performing artificial respiration on an infant, is to hold the child up by the feet with one hand and with the other hand take hold of the body so the fingers of that hand will come on the chest and the thumb on the back; allow the child's head to rest lightly on a padded surface in such a way as to bend the head backward slightly; this will tend to bring a portion of the upper part of the forehead on the padded surface; hold the child in this attitude and compress firmly but gently that part of the chest and back which is between the thumb and fingers; compress the parts in this way 20 times a minute.

POST-PARTUM HEMORRHAGE

Post-partum hemorrhage is a too free or profuse bleeding after the child is born; it usually occurs the first hour after labor.

The symptoms of post-partum hemorrhage are:

Blood comes in spurts or jets, in some instances large clots may form in the

vagina, causing a continuous oozing of blood.

The face and lips are pale.

Cold perspiration — noticeable particularly on the hands, arms and forehead.

Rapid, rather weak, running and undulating pulse.

Frequent yawning (air hunger).

Hurried respiration.

Patient may complain of sensation of dizziness and ringing in the ears.

There may be pain about the heart.

An expression of anxiety.

Increasing restlessness.

The patient gradually becomes semi-delirious or unconscious.

The fluid extract of ergot is sometimes administered to the patient when the bleeding is profuse.

Some doctors administer the ergot as a routine practice whether there is hemorrhage or not. A teaspoonful is an average dose; in a serious case twice that amount may be given. In many cases it is sufficient to give small doses—five or ten drops, and repeat the dose at frequent intervals, if necessary.

The ergot will not act until about twenty minutes after it is taken. It may be administered full strength, or it may be mixed in water.

Sometimes the physician will order sterile or aseptic ergot to be given hypodermically.

Pituitary extract is used by some physicians instead of ergot. It is given by hypodermic injection.

In case of serious *post-partum hemorrhage*, when the blood is pouring out profusely and continuously, the nursing may require much courage.

This hemorrhage may occur at the time of child-birth or possibly not for several hours later.

The physician should be summoned if he is not present.

The hemorrhage may be caused by loss of tone in the uterus due to over-distention or prolonged labor.

It may be caused by retention of the afterbirth, tumors in or about the uterus, tears in the uterus, rupture of the uterus, or it may be due to a too fluid condition of the blood.

Compression of the abdomen and the use of ergot will control profuse bleeding in nearly every case.

In the few cases not so controlled some of the following methods may be employed:—

Loosen the abdominal binder and Credé or knead the uterus.

Elevate the foot of the bed or place a chair under the foot of the mattress in such a way that the patient's legs and pelvis will be higher than the head.

Injecting hot sterile water into the vagina of a temperature of 112 to 120 degrees will help in some cases. The douche nozzle or tube should be inserted from five to seven inches.

Hot fomentations may be applied to the abdomen.

If the blood is flowing freely and collapse seems imminent, the nurse should pack the vagina with sterile gauze, absorbent cotton or sterile cloths, then fold a small towel and press it firmly against the packing to hold the packing in place and to stop the hemorrhage; with the other hand Credé the uterus. One great essential in an emergency of this kind is for the nurse to maintain her equilibrium, keep cool and collected and no matter how much haste seems to be required, to take all the antiseptic precautions that time and the exigencies of the case will permit. Sufficiently vigorous and continuous Credéing of the uterus may prove successful in stop-

ping the hemorrhage even in the most serious cases, and should be resorted to at frequent intervals no matter how efficient in stopping the hemorrhage the packing may appear to be. The nurse may have the husband or other person hold the vaginal packing in place while she is Credéing the uterus or otherwise giving attention to the patient. The nurse, however, should have that spirit of self-sufficiency and mastery that will enable her to feel that she can control the situation even without assistance of any kind. The vaginal packing should be removed in 12 hours and not replaced. Meanwhile the physician should have been notified of the hemorrhage and if the condition of the patient continues serious, every effort should be made to secure his immediate presence.

In desperate cases the physician may pack both the uterus and vagina with gauze. The packing is to be removed in 12 hours. Repacking is not resorted to.

NOTE:—If the doctor packs the uterus and vagina the nurse should place the patient in the proper position: Arrange the patient crosswise of the bed, place the feet on two chairs, hips at or a little over the edge of the bed; protect the patient and wrap each leg with a blanket or sheet.

The after treatment of post-partum hemorrhage often requires the application of external heat—hot-water bottles or hot bricks to the feet, along the sides of the legs and sometimes to the back; gentle friction along the spine may be of value, particularly if the patient complains of chilliness.

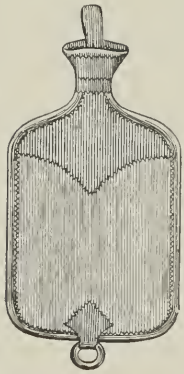

FIG. 35.
Plain Hot Water Bottle.

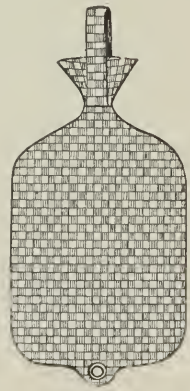

FIG. 36.
Cloth-Covered Hot Water Bottle.

CAESAREAN SECTION

Caesarean section is a cutting down through the abdomen and through the uterus and lifting out the child through these openings. It is quite a serious operation, employed occasionally when the child cannot be born by the natural passages.

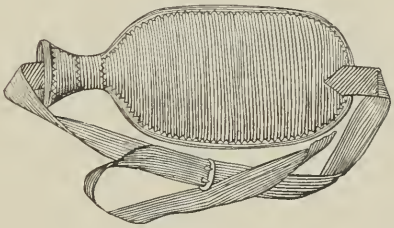

FIG. 37.
Hot Water Bottle with Straps for Holding in Place.

SYMPHYSIOTOMY

Symphysiotomy is a cutting through the symphysis pubis—the bone in the front of the lower part of the abdomen. When this is cut, the bones may be separated a short distance, thus permitting more room for the passage of the child. This operation is very serious, and is rarely performed.

PLACENTA PRAEVIA

Placenta praevia is an attachment of the placenta, or afterbirth, to a part of the uterus lower down than normal.

Such a condition is indicated by sudden painless and apparently causeless bleeding which begins after the fourth month of pregnancy and may continue at frequent intervals until full term.

If the placenta should be attached close to the mouth of the uterus or directly over it, then the birth of the child would be hindered. Such a placenta would require tearing before the delivery of the child, and this would cause very serious hemorrhage. The child must be delivered quickly or the mother will perish from the bleeding. In many cases the life of the child is lost in the effort to deliver rapidly.

Modern Obstetrical Nursing

THE PUERPERIUM

THE PHYSICIAN'S VISIT

AFTER-PAINS THE LOCHIA

THE URINE CATHETERIZATION

THE BOWELS

SERIES FORTY-FIVE

Modern Obstetrical Nursing

By EUGENE UNDERHILL, M.D.

Author of A Text-book of Anatomy;
Infectious Diseases and Their Management;
Nursing—The Heart of the Art;
The Graces of the Nurse;
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Nursing

Underhill

The HOSPITAL Extension COURSE

The Puerperium

The *puerperium* begins the moment the third stage of labor ends.

This is a period of five to eight weeks from the time of child-birth until the woman is fully recovered.

It is also called the *Puerperal Period* and the *Lying-in Period.*

Ordinarily the patient is allowed to lie in bed in such position as is most comfortable; occasionally the doctor will have the patient placed in the Fowler position for a short period of time, especially if there is a tendency to puerperal sepsis or if for any reason he may wish to favor uterine drainage.

During the early part of the puerperium, the woman is liable to more or less frequent attacks of free perspiration, due probably to an exhausted

condition, and frequently brought on by any circumstance that may tend to worry or excite her. These attacks are liable to be followed by chilliness and colds; the condition should be combatted by keeping the patient comfortably warm, quiet, sponging with alcohol and water, and rubbing, particularly rubbing along the spine.

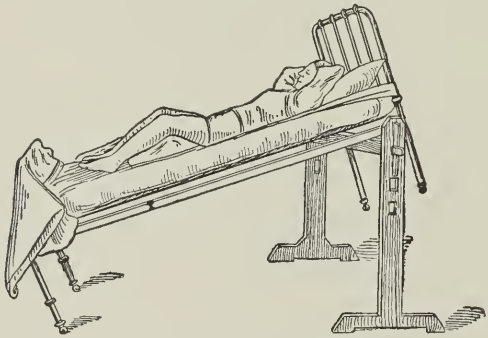

FIG. 38—Fowler Position (Macfarlane).—American Illustrated Medical Dictionary (Dorland).

This position may also be secured by placing a chair under the head of the bed.

During the puerperium, the nurse should keep the room neat, clean and in order. She should not allow basins, bottles, or other articles and utensils not in use to remain in the room. All vessels con-

taining discharges from the bowels or bladder should be promptly removed from the room and emptied. After properly cleaning such vessels it is a good plan to place some water in them and add thereto a few drops of ammonia.

While the room should be kept well aired, and comfortably warm day and night, yet there should be no strong drafts of air through it. The infant will take cold very easily the first few days of its life.

The room should be kept quiet. The father of the child and other immediate members of the family may enter the room, but even they should not have long conversations, discuss perplexing matters or bad news.

There should not be any visitors under any circumstances during the first week. Visitors should wait at least two weeks unless there is some very special reason for an early visit, and even then the advice of the physician should be sought as to whether or not visits should be allowed.

The nurse should take, and record on the chart, the temperature, pulse and respiration twice a day—oftener if any serious trouble is suspected.

A record should be kept of bowel movements; amount and character of urine; the diet; sleep; appearance of lochia; pains, their character and location; and any other matters that seem of importance. Symptoms that seem of serious import should be reported at once to the physician.

The Physician's Visit

When the physician visits the lying-in woman, the nurse should hand him the clinical chart and the bedside record, and be prepared to give him any information he desires; he will want to know especially about the

Temperature,	Pains,
Pulse,	Lochia,
Respiration,	Urine,
Sleep,	Bowel movements,

and any other matters that may seem to the nurse to require his attention.

If lacerations occurred at the time of labor, the doctor may have repaired the damage immediately, nevertheless, on the fourth or fifth day after labor he will likely examine the patient; he will examine the anal region, the perineum and the external genitals; he will examine the cervix through a speculum (See Figs. 39 to 44) and he will examine for injuries to the vaginal wall with the finger and by means of the speculum as he inserts it to examine the cervix; if he suspects injury to or fracture of the coccyx, he will make a digital examination of the coccyx per rectum.

It is the duty of the nurse to place the patient in such position as the doctor may require. Usually he will prefer to have the patient placed in the dorsal position (See Figs. 14 and 15) crosswise of the bed with the hips down to or projecting slightly over the edge of the mattress and the feet on two chairs; the patient should be placed in as

FIG. 39.
Vaginal Speculum.

FIG. 40.
Sim's Vaginal Speculum.

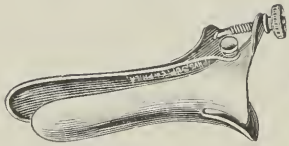

FIG. 41.
Taylor's Vaginal Speculum.

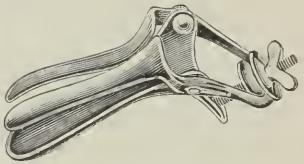

FIG. 42.
Nott's Trivalve Vaginal Speculum.

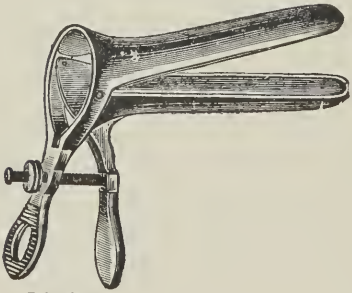

FIG. 43.
Vaginal Dilating Speculum (Storer).

FIG. 44.
Self-retaining Vaginal Speculum (Edebohl).

good light as is available. The patient may also be placed in the dorsal position but occupying an oblique position in the bed; this is accomplished by placing the patient's head toward one upper corner of the bed and drawing the hips to the edge of the opposite side of the bed, placing one foot on a chair and allowing the other foot to remain on the bed.

After placing the patient in the proper position and having the legs draped separately with a sheet, the nurse should then wash the parts with sterile water. If the doctor finds lacerations or injuries requiring surgical attention, he will probably make the necessary repair about the seventh day after labor, unless the patient has a fever, in which case he will delay operative measures until the patient's temperature has been normal for at least six days.

About the middle of the third week the doctor may examine the patient for retroversion (bending of the uterus backward); if he finds this con-

dition present, he will probably replace the organ, and for this purpose he will require the patient to be placed in the knee-chest position. (See Figs. 33 and 34.)

Some physicians make a final examination at about the end of the sixth week after labor; at this time he will again look for injuries to the vagina and cervix, for retroversion, and prolapse (falling or sinking of the uterus), and for possible inflammatory conditions of the pelvis.

"After-Pains"

The pains called *after-pains* are by some physicians supposed to be caused by the contractions of the uterus. These pains are rare in women with the first child, but they are quite common in women who have borne more than one child. They may be normal. Some physicians think there must be some after-pains to reduce the size of the uterus and to expel the discharges.

If the after-pains are very serious or frequent, it may mean that there is something in the uterus,

clots of blood or a piece of the afterbirth, which the uterus is trying to expel. To relieve after-pains, the physician may prescribe ergot and paregoric,—half a teaspoonful of each, to be given when the pains are very severe.

The Lochia

The vaginal discharges from the lying-in woman are called *the lochia.*

During the first five days the discharge is quite red, and is called "*lochia rubra.*"

From the sixth to the seventh days it is much lighter in color, and is called "*lochia serosa.*"

From the seventh to the twenty-first day, it is nearly white, and is called "*lochia alba.*"

The lochia may cease in two weeks; occasionally it may be present as long as six weeks.

For the first few days the napkin should be changed about every two hours. The best napkin

or pad is made of absorbent cotton rolled in aseptic gauze.

Before changing the napkin, the nurse should in each instance thoroughly disinfect her hands. Wash the parts gently with sterile water and dry carefully before applying the fresh napkin or pad.

The lochia has a characteristic odor and if everything is going right, the odor is not particularly offensive; if it does become very offensive or has some unusual odor, this circumstance should be reported to the doctor. It may indicate that clots or pieces of the afterbirth are in the vagina or uterus, or that some septic condition is beginning or is actually present.

Caution:—The nurse should always keep in mind the possibility of conveying infection by means of the lochial discharges. She should not only disinfect her hands *before* changing the napkin, but she should disinfect her hands *after* changing the napkin or whenever her hands come

in contact with the discharges, otherwise she may infect the mother's breasts, the eyes and the umbilicus of the baby, and she may even infect her own hands, eyes or other parts of her body.

The Urine, Catheterization

In the ordinary case the patient should not get out of bed to urinate, but she should use the bed-pan or the douche-pan, and especially if she is very weak, or if there is profuse bleeding. If the patient is in good condition, she may be allowed to sit upright on a commode in bed, but she should be assisted to that position and well supported.

Urination should take place in six or eight hours after labor. If it does not, it may be necessary to resort to the catheter in twelve to twenty-four hours. Do not wait that long if the patient is having distress from retention of urine.

Before resorting to the catheter, the following measures to promote the flow of the urine may be tried:

(a) The application of a hot water bottle just above the pubis at the base of the abdomen.

(b) Douching the genitals with warm sterile water.

(c) Rectal injections of water.

(d) Gentle pressure over the bladder with the hand.

(e) Allow the patient to hear the sound of running water.

(f) If retention is due to simple nervousness, the patient may be able to urinate if the urinal or bed-pan is adjusted and the patient is left entirely alone for a short time.

If these measures fail, the catheter must be used, but it is advisable to seek the advice and direction of the physician; some physicians being very reluctant to have these patients catheterized owing to the danger of infection and possible irritation to the pelvic organs.

For catheterization of the lying-in woman, use a soft rubber male catheter or a female glass catheter.

Always sterilize the catheter by boiling twenty minutes before using.

Before attempting to pass the catheter, cleanse away all discharges, and it is often desirable to irrigate the parts thoroughly with a solution of bi-chloride of mercury of the strength of 1 to 10,000 or with a solution of lysol or with whatever solution or strength of solution the doctor may advise.

Oil the catheter with a bland, clear ointment—for example, petrolatum or sterile olive oil. Some doctors advise against the use of a lubricant unless it is known to be sterile. The nurse should have previously disinfected her hands.

Have the patient lying on the back, knees flexed and separated, and each leg covered separately. A good light should illumine the parts. Use the thumb and forefinger of one hand to separate

the labia, with the other hand insert the catheter into the urethral opening, seen in front of the vagina just within the vulva.

FIG. 45 — Female Glass Catheter.

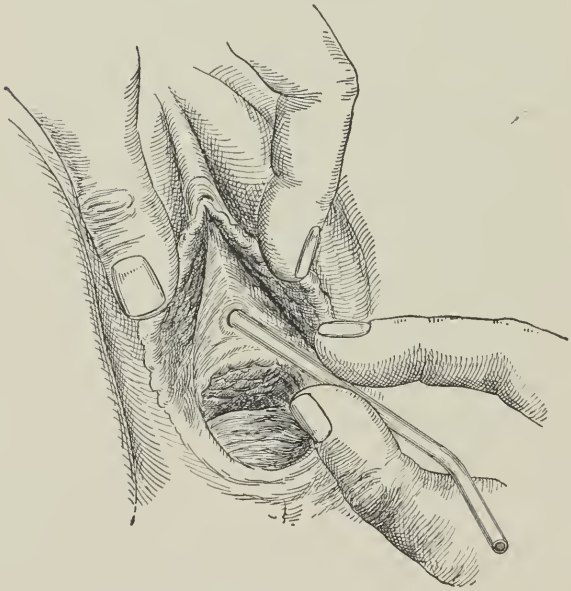

FIG. 46 — Catheterization of the Bladder.
Shows the catheter being introduced (Ashton).

Have a basin adjusted to receive the urine.

Push the catheter in gently until the urine flows.

When a small amount—for example, three or four ounces or about a half cupful—has passed, the flow should be stopped by placing a finger on the end of the catheter.

Never draw more than four ounces of urine without stopping a few minutes or the patient may faint, or even go into a state of collapse.

When all the urine has passed, place a finger firmly against the end of the catheter before withdrawing it, hold it over the vessel before removing the finger; the catheter will be full of urine, which will needlessly be brought in contact with neighboring tissues, and will also soil the bed unless this care is taken.

The catheter should be well washed after using, allowing hot water to run through from each end.

A catheter that is in use frequently may be allowed to lie in a strong solution of bicarbonate of soda or in a solution of carbolic acid of the strength of 1 to 20, thus having it constantly ready for use simply by rinsing in sterile water.

The Bowels

The bowels of the lying-in woman should move before, or certainly not later than the end of the third day; if they do not, she will have fever simply from absorption of toxic or poisonous elements retained in the alimentary tract.

At the beginning of the third day measures should be adopted to cause bowel movement if there is no inclination to have a passage. Any of the ordinary purgative medicines, such as castor oil, magnesium sulphate (Epsom salts), licorice powder, or cascara, may be administered or an enema may be given, but the advice and direction of the attending physician should always be secured. Some physicians regard castor oil as the most satisfactory, one or two tablespoonfuls. It

gives an easy passage quickly, helps to overcome the soreness and will have a favorable action on the breasts. Other physicians prefer magnesium sulphate—one to two tablespoonfuls in a glass of hot water, to be taken a half hour before breakfast. Still other physicians prefer simple enemas to purgatives of any kind.

Modern Obstetrical Nursing

THE DIET DURING THE PUERPERIUM

DOUCHES

WHEN THE PATIENT MAY SIT UP

INVOLUTION SUBINVOLUTION

CARE OF THE BREASTS

CARE OF THE NIPPLES

TO INCREASE THE SUPPLY OF MILK

TO STOP THE FLOW OF MILK

SERIES FORTY-SIX

Modern Obstetrical Nursing

By EUGENE UNDERHILL, M.D.

Author of A Text-book of Anatomy;
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Nursing
Underhill

The Diet during the Puerperium

The diet of the lying-in woman should be strictly liquid for the first twenty-four hours. She should wait two or three hours after delivery, depending on circumstances, before taking any food.

A very good meal to begin with is broth or beef tea. Then every three or four hours she should be fed milk or broth.

During the second day, if doing well, she may have one or two meals of convalescent foods, such as gruel, custard and toast; the other meals should be strictly liquid.

The third and fourth days she may have two or three meals of convalescent foods, and milk or broth for the other meals.

After the fourth day, if the patient has no fever and the bowels have moved and she is doing well, she may then have a comparatively liberal diet of

convalescent foods—gruels, soft-boiled eggs, custards, toast, mutton chops, baked potatoes, etc. Potatoes, however, in any form should be given sparingly as they tend to an accumulation of gas in the intestines and they may affect the child in the same way. Acid fruits should be administered sparingly. Peaches and prunes, however, may be desirable additions to the dietary, especially if both mother and child are constipated. Ice cream is allowable in moderate amounts; tea, coffee and cocoa may also be given.

The chief thing to be considered in feeding the lying-in woman, is to administer such foods and liquids as are known to agree and not to give too much food. It is well to remember that the patient is not sick in the ordinary sense of the term, she can therefore partake of almost any kind of food she has been accustomed to in reasonable amounts; yet while the woman is not sick, the mere fact that she is in bed and therefore not active, requires that the diet should be less in amount than usual.

The effect of the diet should be watched particularly in reference to the baby. If the baby's bowels are unfavorably affected, the probabilities are that the mother's diet needs regulating and the regulation required as a general rule is, that the mother should eat less, or that some particular article of diet should be omitted which may seem to be unfavorably affecting the child.

Douches

Douches are sometimes required for the lying-in woman. They are not necessary if everything is progressing satisfactorily, but when the woman has been having leucorrhoea, or when there is a foul odor to the lochia, or when there is fever not satisfactorily accounted for, then the physician may order the douche.

Have a fountain syringe, holding about two quarts, with a nozzle four or five inches long, and having several small openings near the end.

Sterilize the nozzle by boiling twenty minutes or soaking in a disinfecting solution.

Sterilize the fountain syringe or reservoir portion by boiling for a short time or pouring boiling water through it and then immerse and allow it to remain in a solution of carbolic acid, of the strength of 1 to 20, for at least a half an hour.

When about to use the syringe, remove it from the solution, rinse the nozzle and reservoir portion with sterile water, allowing sterile water to flow through the tubing; hang the syringe about three feet higher than the level of the patient.

The best position for the patient is across the bed with the feet on chairs placed about a foot from the bed. Have the patient well out over the side of the bed, so that the water may flow into a basin on the floor without wetting the mattress. When the patient is in this position, the vagina will be flushed better than when the patient is in any other position.

Having the patient in bed on a douche-pan gives fairly good results.

Plain sterile water, temperature about 110 to 115 degrees, may be used for the flushing or douching. It may not be necessary to have the water warmer than 98 to 105 degrees.

If there is any sign of infection, the doctor may advise the use of some disinfectant in the water. Bichloride of mercury, called also Corrosive Sublimate, is one of the most reliable disinfectants when serious trouble threatens as a result of infection. The strength employed by many physicians is usually 1 to 5,000 or 1 to 8,000. This may be followed by a douche of plain sterile water, so as to be sure that none of the bichloride solution is left in the vagina.

Permanganate of potassium, a wine-colored solution, about 3 grains to a quart of water, is often used for douching; the doctor may prescribe this drug in various other strengths.

Other disinfectants used are: creolin, carbolic acid, and lysol, one-half to one teaspoonful of any one of them to two quarts of water. The physician, however, must be depended upon to specify the drug and the strength of the solution to be used.

Caution:—Douching is resorted to less frequently than formerly on account of the liability of carrying infection up into the uterus and to the other pelvic structures. The nurse should never give a vaginal douche without first having received specific instructions from the attending physician and definite directions as to the kind and strength of solution to be used.

Whenever a vaginal douche is ordered the nurse should exercise great care and cleanliness in respect to utensils, preparation of the solution and the disinfection of her hands.

Care should be exercised not to have solutions so hot as to burn the patient; avoid injections of

air by allowing the fluid to flow through the tube and nozzle before introducing it into the vagina; be careful not to allow the fluid to flow in with too much force; withdraw the nozzle before the last portion of the fluid or solution has been injected.

When the Patient May Sit Up

The lying-in woman may sit up when her physical condition warrants it—when the temperature and the pulse have been normal for several days, and the uterus is so small that it can be felt only with difficulty in the lower portion of the abdomen.

In the average normal case, the woman will be able to get out of bed for a little while about the tenth day. In every case the nurse should seek the counsel and direction of the doctor as to when it will be safe to allow the patient to sit up either in bed or out of bed. If she has had much fever or serious trouble of any kind, the doctor may not

allow her to sit up until after the expiration of two weeks or more.

The uterus is not likely to return to its normal size and position if the woman leaves her bed too soon. It will remain large and heavy, and will likely drag down of its own weight in later years. This is one of the most fruitful causes of uterine trouble.

Involution **Subinvolution**

Involution is the process of the uterus returning to its normal size and condition. Complete involution requires from six to ten weeks.

Subinvolution means that the uterus remains large and heavy. This is caused by the patient getting up too soon, or to other causes which interfere with the return of the uterus to its proper size.

Care of the Breasts

In caring for the breasts of the lying-in woman, attention should be given that each breast is emptied at least once a day. If it is not done by the child, it should be done with the breast pump; otherwise the milk will accumulate, causing probably mastitis (caked breasts), and, a little later, abscess.

Examine the breasts each day to see that there are no hard areas or nodules. If these are found, and efficient care is given promptly, they may be caused to disappear, thus preventing the development of a serious abscess.

At the first indication of any hardness in the breast, use the breast pump until all the milk is removed; then bathe the breast well with hot lard. All lumps and hardness will likely disappear if this is done several times a day. Hot fomentations are sometimes used with success, applied for 20

minutes every two hours. Massage and rubbing toward the nipple to expel the milk, is of no avail, and may be harmful.

If the unfavorable condition persists, the doctor may advise the application of a breast binder and the application on top of that of ice bags and the administration of a saline purge. During an attack of mastitis, the feet should be kept warm (hot water bottles or bricks to the feet), and the diet should be reduced in amount. If these measures are adopted the child should be given other food for a few days—the doctor will give directions as to when the child may be put to the breast; even if the milk appears to have entirely dried up the flow will start again if the child is persistently placed to the breast.

Care of the Nipples

The nipples should be gently washed both before and after the baby nurses. Use absorbent cotton and sterile water or warm boric acid solution.

In some cases the nipples are tender, and the nursing will cause soreness. In this way micro-organisms may gain entrance to the breast and set up serious trouble.

The application of warm boric acid solution may be helpful in such cases.

A mixture, composed of a saturated solution of boric acid, 80 parts; alcohol, 10 parts; glycerin, 10 parts, generally gives very prompt relief.

A saturated solution of alum in water is also very useful for sore, raw or cracked nipples. Be careful to use sterile water to wash away these medicaments before the infant again nurses.

If the nursing should cause so great pain as to be unendurable then a nipple shield should be used. The glass bell-shaped shield, having a soft rubber nipple is a very good variety. It should be taken apart after being used, washed with hot water and soap and put to soak in a cup of water

containing a half teaspoonful of bicarbonate of soda. Rinse in sterile water before again using.

In some cases the nipples will be short, or depressed, or even inverted, so that the child is unable to suckle. Such cases will require the nipple shield, and in this way the nipple may be drawn out so that after a little time the child may be able to grasp the nipple itself.

Much can be done to improve the condition of such nipples by manipulating them, drawing them out, and applying strips of adhesive plaster near the nipple in such a way as to gently compress the breast.

An inverted nipple can sometimes be drawn out by holding over it the mouth of a bottle just emptied of hot water.

To Increase the Supply of Milk

Agalactia is the technical term for a deficiency or scarcity of the milk supply.

Galactorrhea is the term applied to an excessive flow of milk.

Drinking large quantities of pure water is the very best and most effective way of increasing the milk supply. A glass or two of water should be taken before breakfast and at frequent intervals between meals and upon retiring at night; eating an apple at night (scraped apple, if preferred) will create a thirst for water which should be immediately and freely gratified.

A diet consisting largely of milk, also gruels, especially oatmeal gruel, with plenty of milk, tends to increase the milk supply.

In some cases, however, a large amount of milk in the dietary causes the mother to put on fat instead of increasing the milk supply; in such cases the diet should not consist so largely of milk.

Occasionally beer and various malt and alcoholic liquors are resorted to, but their value is exceedingly doubtful; as a general rule these beverages

cause the mother to put on fat and to dry up the milk, and even if they do not act in this way they are of questionable value and the possibilites of harm are considerable. They keep the mother in a state of unnatural stimulation and their effect upon both mother and child is not likely to be of any special value, if they are not wholly bad.

Fairly liberal quantities of fresh meat and eggs, prepared and served to the patient's taste, tend to increase the flow of milk.

Bitter tonics are sometimes helpful.

Massage, which is sometimes advocated to increase the milk supply, usually has the opposite effect, namely: to stop the flow of milk. It may have a slight tendency to increase the supply of milk if the massage is done at some distance from the breasts; the effect then is to attract an increased amount of blood to the neighborhood of the milk glands, and thus possibly aiding somewhat the lacteal vessels in securing the elements necessary for the production of milk.

A quiet, hopeful, care-free life during the period of lactation, and avoidance of too prolonged and exhausting exercise and work, all tend to maintain and increase the milk supply.

The beneficent effects of a quiet life, free from anxiety and worry and the avoidance of all passionate excitement, especially all excitement that has its basis in worry, fear, and anger, cannot be too forcefully emphasized. However, there are some physicians who minimize the possible harmful effects of these emotions upon the child.

So important is it that the mother should nurse the child that if she cannot or will not control her emotions, it is still better for the child to be nourished from the mother's breast rather than to resort to any substitutes.

Of course the effect of the mother's milk upon the child may be so disastrous as to make it absolutely necessary to resort to some other food. As a general rule, however, the milk even from the

most high-strung, nervous and hysterical mother is better for the child than the milk from the most complacent old cow, no matter how prepared or modified.

To Stop the Flow of Milk

To stop the flow of milk, in case the child dies or the mother for some reason is not able to nurse the child, give a very restricted diet, with very little liquids.

Massage the breasts and apply warm camphorated oil liberally several times a day.

These measures will likely be sufficient, but if not, then bandage the breasts so as to apply some pressure.

Before applying the bandage the milk in the breasts should be pumped out and the nipples and surrounding tissue cleansed thoroughly with soap and water and rinsed with boric acid solution.

Modern Obstetrical Nursing

DISEASES PECULIAR TO THE LYING-IN PERIOD

SERIES FORTY-SEVEN

Modern Obstetrical Nursing

By EUGENE UNDERHILL, M.D.

Author of A Text-book of Anatomy;
Infectious Diseases and Their Management;
Nursing—The Heart of the Art;
The Graces of the Nurse;
Sick-room Care and Practice, etc.

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DISEASES PECULIAR TO THE LYING-IN PERIOD

Puerperal fever
Eclampsia
Phlegmasia alba dolens (milk-leg)
Puerperal insanity

Puerperal Fever

Puerperal fever or *septicemia* was formerly expected in many cases of child-birth. But since absolute cleanliness has been recognized as the chief factor in preventing infection, the number of cases of this disease has been greatly diminished.

Puerperal fever may arise from infection from unclean hands, instruments, beds, bed-clothing, napkins or any other unclean thing with which the patient may come in contact.

A very fruitful source of the disease, and probably the chief source, is retention of a portion of the afterbirth. A very small piece torn from the

afterbirth and left adhering to the uterine wall will be likely to decompose and infect the patient.

The most likely time for the symptoms to manifest themselves would be about the third, fourth or fifth day after confinement. Probably the first indication will be the foul odor from the decomposition of the retained portion of the afterbirth.

There may be a chill, rise in temperature, rapid pulse, restlessness, headache, probably vomiting.

The temperature is likely to be erratic, probably very high for a time, then falling to a point below normal; this rise and fall of the temperature will continue to alternate.

The *nursing* for puerperal fever will consist in redoubling the zeal to secure and maintain cleanliness.

Every effort should be made to maintain and add to the strength and resisting power of the patient. She should not be allowed to use her

own strength for any purpose whatever. Use the bed pan; keep the room free from all unnecessary noises; do not allow visitors; keep the patient free from household cares and worries and encourage a cheerful and hopeful frame of mind.

Keep the skin active; bathe frequently with plain water or with alcohol and water; the importance of frequent bathing should not be lost sight of, it promotes the activity of the skin and thus aids in the elimination of poisonous materials.

The vulvar dressings should be frequently changed; this is essential for the reason that the discharges are apt to be very excoriating and may tend to auto-infection.

Keep the bowels as regular as possible. If there is constipation the physician will likely permit the administration of enemas of warm water or warm soapy water. If there is diarrhœa, the doctor's attention should be called to the circum-

stance, when he will likely prescribe some suitable medicine. If symptoms of peritonitis develop, the doctor may direct the nurse to apply cold to the abdomen (ice bags) or hot fomentations; mustard plasters are sometimes used (*caution*—see that they do not blister).

Every detail of the nursing in puerperal fever calls for absolute cleanliness; the nurse's hands should be thoroughly disinfected before handling the patient for any purpose, and particularly when changing the vulvar dressings; when changing these dressings she had better wear sterile rubber gloves, if they are available. She should have the idea of cleanliness uppermost in her mind as much as she would if assisting at a surgical operation. There is danger also of the nurse infecting her hands, her eyes, or other portions of her body, if she is not very careful and does not observe strict aseptic precautions.

It may be necessary to wean the baby at once—the doctor will however, decide that point. If

the baby is weaned, it will be better to have some one else take charge of it, on account of the liability of the nurse infecting the child after handling the mother.

The nurse, however, can take care of both mother and child without infecting the child if she is thorough and faithful in her antiseptic precautions.

The physician may order an antiseptic douche to be given at frequent intervals.

Abdominal pain, if present, may be relieved by the application of a turpentine stupe.

The physician may curette (scrape) the walls of the uterus so as to remove any adhering parts of the afterbirth.

The diet should be liquid and of a very supporting character and easily assimilated. Some suitable foods are whole milk, junket, custards, thoroughly cooked rice with milk, buttermilk, beef broth and

beef extract or beef juice. Proper nourishment is very important, as it is the chief factor to be relied upon in maintaining the patient's strength and in enabling her to throw off the disease.

Eclampsia

The word *eclampsia* is derived from a Greek word which means "to shine" or "burst forth," and is used in this connection to denote the great suddenness with which the disease is liable to manifest itself.

Eclampsia or *puerperal convulsion* is liable to occur in patients who have kidney affections.

The convulsions are caused by retention in the system of some waste products, particularly such products as should be eliminated by the kidneys.

It may be due to brain tumor, and to epilepsy; hysteria is a predisposing cause.

Eclampsia occurs most frequently in the primipara; during the birth of twins and during the birth of illegitimate children.

Usually the patient will have albuminuria (albumin in the urine).

The urine is likely to be scant in quantity.

There will probably be edema (swelling) about the ankles or below the eyes.

Usually the first convulsion will occur soon after confinement, but it may occur before confinement, or not until several days after confinement.

In many cases there are no symptoms of any kind leading the attendants to suspect eclampsia. The patient simply goes into a convulsion, lasting a few minutes. This may be followed in rapid succession by other convulsions.

The *preliminary* or *first period* of the convulsion lasts half a minute to a minute. The first symptoms are slight muscular movements about the face, the eyes become fixed and staring, but the eyelids close and open very rapidly for a little

while, then the eyeballs roll upward or to one side. The lower jaw may be drawn to one side; the head is quite apt to be drawn toward one shoulder or to be drawn backward.

The *second period* of the convulsion lasts only a few seconds, but during this period there are quick muscular contractions involving the whole muscular system, bringing about, in some instances, a condition of opisthotonos (the body arched and the head and feet bent backward). Feces and urine may be involuntarily passed. The tongue is forced forward, and may be severely bitten.

In the *third period* of the convulsion there are short, jerky spasms, the respirations are irregular and jerky. There is often frothing at the mouth, twitching of the facial muscles and rolling of the eyeballs. The patient passes into a state of coma, which lasts five or ten minutes or longer.

The period of coma lasts longer as the number

of convulsions increase. The convulsions vary in number from one to a hundred or even more.

The pulse rate is increased, and there is generally a rise in the temperature.

There is frequently temporary loss of vision and loss of memory, which may continue for several days after the attack.

Death to the mother results in 20 to 30 per cent. of the cases. The fetal mortality is from 30 to 50 per cent. or more.

The nurse should direct her efforts to stimulate the kidneys, the skin and the bowels to greater excretion of waste products.

Hot applications to the back in the region of the kidneys will be beneficial.

Keep the patient a little warmer than usual; apply hot water bottles to cause sweating.

Give warm baths so as to stimulate the skin and to cleanse it, and thus favor more sweating.

Hot packs are sometimes ordered. Immerse a blanket in hot water, wring out the excess of water, and envelop the patient in it, having the blanket as hot as can be borne without danger of burning; cover this with a dry blanket and apply hot-water bottles to the feet. The hot pack should be renewed every fifteen or twenty minutes. Continue the packs as long as may be directed by the doctor.

Prevent the patient from injuring herself during a convulsion. Place something between the teeth to prevent injury to or biting of the tongue. A clothes pin covered with a piece of gauze will serve this purpose, and is especially suitable because it will give somewhat between the teeth. A corner of a towel rolled tightly and placed between the teeth will also serve the purpose.

Change the position of the patient frequently.

Keep the room quiet.

Whiffs of chloroform generally act promptly in controlling the first attacks, but physicians use this very guardedly, or not at all, as it is quite apt to have a bad effect upon the liver, kidneys and heart.

Sometimes the doctor prescribes medicines for administration per rectum to control the convulsions.

The doctor may wash out the stomach and then give the patient, through the tube, or by mouth

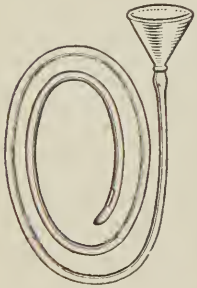

Fig. 47.
Stomach Tube.

Fig. 48.
Washing Out the Stomach (Gastric Lavage).
From a photograph taken in the Central Hospital of Philadelphia.

if the patient can swallow, two ounces of castor oil or two ounces of sulphate of magnesia (he may repeat the sulphate of magnesia in smaller doses every 15 or 20 minutes until the bowels move), or he may administer some other drug for promptly moving the bowels.

Place the patient on a milk diet, and maintain good hygienic conditions.

Tonics are often prescribed to improve the general condition of the patient.

Phlegmasia Alba Dolens

Phlegmasia alba dolens or *milk-leg* is a swelling of one or both legs after confinement. It usually begins in 10 to 30 days after delivery.

There will be pain in the calf of the leg, and usually the leg will have a milk-white color.

There is slight fever which appears before the swelling begins and lasts from seven to ten days.

The affection is due to a stoppage of the circulation in some part of the leg. It is in reality an infection which, having reached the sides of the uterus, involves the cellular tissue and some of the pelvic veins. The infection travels along the course of the involved veins until some of the veins of the leg become clogged by particles absorbed from the uterus, by thickening of the blood, or by inflammation.

The patient should be kept at absolute rest in bed; the foot may be placed on a pillow, thus elevating the leg somewhat so as to aid the circulation.

The bed-clothes should be kept off the limb by a support of some kind.

The leg may be wrapped in cotton and a bandage applied with gentle pressure. Remove the bandage each day and bathe the leg in warm water to aid absorption.

Some doctors will direct the nurse to paint over the course of the involved veins with iodin or a

10 to 20 per cent. solution of ichthyol. This painting should not be repeated, particularly the application of the iodin, without specific instructions from the attending physician. Instead of the ichthyol solution some physicians use ichthyol ointment.

The patient should have a liquid diet.

The bowels should be kept regular and free.

Massage should not be practiced; it may do harm. The reason massage is not resorted to is due to the fact that such manipulation of the part may result in breaking off or setting free in the circulation a small portion of clotted blood (embolus or plug) which may be carried to the heart and seriously interfere with the function of that organ, or it may cause instant death.

Usually the swelling disappears in one to two weeks, but it may be several weeks longer before the leg returns to the normal condition. After the patient has apparently entirely recovered, the

leg may occasionally swell, particularly after severe exercise or prolonged exhaustion. Such recurrences are not serious, but emphasize the importance of care. Some doctors have the patient wear an elastic or flannel bandage on the leg during convalescence and as long as there is any tendency to swelling.

Puerperal Insanity

Insanity may occur during pregnancy, during the puerperium, or at some time during lactation.

It is more apt to appear during the puerperium.

It may be of a melancholic or maniacal type.

The predisposing causes are: Hereditary tendency; exhaustion as a result of prolonged labor; septic infection, or some protracted constitutional disturbance or disease.

The premonitory symptoms are:

Insomnia.

Mental confusion.

Loss of appetite.

Loss of affection for the child.

There may be great restlessness or the patient may lie in a state of apathy and stupor.

There are often delusions of sight and of hearing, she may declare she hears the voice of God commanding her to kill herself or kill the child, and she may do both unless the nurse is exceedingly watchful.

Occasionally the patient may show a disposition to attack the nurse or other persons who may enter the room.

The chief factors in caring for such a patient are:

Guard against injuries to herself, her child, and other persons.

Maintain rest and quiet.

Induce sleep.

Support the patient by the administration of a liberal and supporting diet consisting of milk and eggs, meat and meat broths, ripe fruits or fruit juices.

Alcohol rubs.

Massage, both general and along the spine.

The glow bath.

Frequent hot baths.

Attention to the bowels—keeping them free and regular.

Freedom from anxiety and worry.

Ordinarily the patient should not be allowed to nurse the child, but she may nurse it if she is carefully watched; and this watching means something more than simply being in the room. The nurse should be right at the mother's side, and should be alert and watchful during every moment

the mother is nursing the child. This is important, as otherwise in a sudden attack of mania the mother might kill the child before the nurse could interfere.

In bad cases of puerperal insanity the milk shows a tendency to dry up, or at least to disagree with the child; in such cases it is better to resort to other means of feeding.

Scissors, knives, forks, drinking glasses or easily movable objects of any kind should not be allowed in the patient's room. Such a patient should not be left alone; she may jump out of the window, jump down stairs, or run out into the street. In serious cases such patients can usually be better cared for in an institution.

The prospects of recovery are good when septic infection is the chief cause, and especially if the insanity is of the maniacal type.

The prospects of recovery are not so good if the cause is something other than infection, and especially if the insanity is of the melancholic type.

In either type the insanity is liable to persist for from two to six months.

One-third of the cases either die or remain insane; two-thirds recover.

Modern Obstetrical Nursing

CARE OF INFANTS AND CHILDREN

FEEDING AT THE BREAST

EVIDENCES OF PROPER NUTRITION

THE MOTHER'S MILK

THINGS THAT MAY AFFECT THE MILK AND THE CHILD UNFAVORABLY

WEANING THE BABY

ARTIFICIAL FEEDING OF INFANTS

DIET LISTS

TOP MILK MIXTURES

SERIES FORTY-EIGHT

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By EUGENE UNDERHILL, M.D.

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The HOSPITAL Extension COURSE

The Care of Infants and Children

Feeding at the Breast

In about six to ten hours after birth, the child should be put to the breast. By this time the mother has had some rest, and the child should have a lesson in nursing, though it may not be very hungry. Real hunger will not be apparent in the child until 12 hours or more after birth.

However, putting the child to the breast will help to develop the nipple, will stimulate the breasts, and will stimulate contractions in the uterus. This stimulation to uterine contractions will be very important in case the bleeding is too profuse.

The first secretion of the breast is an oily material called *Colostrum*. It has a laxative effect

on the child's bowels and will move from them the black tar-like material called *Meconium.*

Gradually the breast secretions become less oily, and more like milk. About the third day the true milk appears. Likewise the passages from the child's bowels gradually become lighter in color, until about the third day they are bright yellow.

After putting the child to the breast the first time, which should have been in about six to ten hours after birth, the child should then be put to the breast about every four hours for three days. After that the child should be put to the breast every two hours until it is two months old. Then the time should gradually be lengthened so that by the time the child is three months old it will be fed every three hours. This interval of three hours between nursing periods should be continued as long as the child is dependent on the mother's milk.

The intervals at night should be longer than the intervals during the day. From the very first it

is a good plan to gradually lengthen the intervals of night feedings until the child is permitted to sleep undisturbed from 10 p.m. until 5 or 6 a.m.

Fifteen to twenty minutes is usually long enough for the child to nurse. If the child is not satisfied in twenty minutes, it is likely that there is insufficient milk in the breasts or else the child is not able to draw it. To ascertain whether or not the child is getting a sufficient supply of milk, weigh the child before and after nursing. The difference in the weight represents the amount of milk the child secures.

The child should not be allowed to sleep at the breast as it macerates (softens) the nipple and surrounding areola, and favors the entrance of infection which may set up mastitis or other abnormal condition of the breast.

After nursing, the child may frequently vomit a small quantity of milk. This is not alarming. If, however, the vomiting is excessive, or if there

are large curds, the circumstance should be brought to the attention of the physician.

Care should be taken to feed the child at regular intervals. Haphazard feeding, or feeding whenever the child cries, is a pernicious practice. It disturbs the child's digestion and is often a predisposing factor in the development of more or less serious disease conditions.

If the child frets and cries, an effort should be made to ascertain why it does so, and the cause removed. Fretting may be caused by an uncomfortable position, a tight belly-band, a safety-pin misplaced, or a garment drawing on some part of the body.

Most frequently the cause of fretfulness is in the alimentary canal—dyspepsia, gas in the stomach or bowels, constipation, etc. Or the baby may need a drink of water. In older children, dentition may be the cause.

In some cases, when it is positively known that

the child has no good cause for crying it will be well to permit it to have a good, long cry. It will tend to strengthen its lungs, and may be of benefit in other ways.

The baby "comforter" or "pacifier"—that is, a nipple for the baby to suck—should not be used.

Evidences of Proper Nutrition

The evidences of proper nutrition of the baby are as follows:

Contentment

Increase in weight (during the first week there may be a slight decrease in weight, after that the infant should increase in weight about one-quarter of a pound a week).

Firm muscles (the best places to look for these are at the upper inner portion of the thigh and the upper portion of the arm. If these parts are flabby, and the skin hangs in folds, the baby is not thriving).

The Mother's Milk

If the child is not thriving the doctor's attention should be called to the circumstance, and he may make a chemical examination of the milk or suggest other food for the baby.

Things That May Affect the Milk and the Child Unfavorably

Various emotions, including fright, grief, anger, and any unusual excitement may so affect the mother's milk as to cause illness in the infant, in some cases a convulsion may result.

A nursing woman does not usually menstruate, but in some cases she does, and this may cause illness in the infant. The child, however, should be allowed to nurse, even if the mother is menstruating, unless it is known positively that the milk at such times causes illness, when the infant should be fed artificially for a few days, and the mother's milk drawn by the breast pump and thrown away. When the menses cease the child may resume nursing.

If the nursing mother should become pregnant, she should cease nursing the infant at once, as her milk under such conditions would certainly cause illness.

Weaning the Baby

In the ordinary case, when both the mother and child are doing well, it is not necessary to wean the baby until it has cut the "stomach" and "eye" teeth—that is, until it has sixteen teeth.

It should be possible and safe to wean the average child any time after nine months of age, as it will have its digestive function quite well established by that time, and it should be able to digest any suitable infant food. But weaning so early is not advisable unless there is a special reason, as illness on the part of the mother. It is well to continue nursing the baby for at least part of each day, even after beginning with other food. The mother's milk will then be available in case the artificial food does not agree or in the event of illness of the child.

If possible, the weaning should be done gradually. At first give a meal once a day, or once every two days, of such foods as the age and condition of the child requires. Gradually increase the number of meals of the artificial feeding, so that the child will finally be weaned without unfavorably affecting it in any way.

In case of serious illness of the mother at the time of the child's birth, or if the milk is of very poor quality, it may be necessary to wean the child at once.

Artificial Feeding of Infants

The proper artificial feeding of infants is a serious problem and should never be undertaken without the advice, guidance and oversight of the physician; it is not any part of the business of the nurse to suggest artificial foods or milk mixtures for infants. It is her business to seek the direction of the attending physician and to carry out his orders with great care and fidelity. The suggestions here given may serve the purpose in nor-

mal cases or in the absence of specific instructions. If, however, the food prepared in accordance with these suggestions does not seem to agree with the child, the advice and direction of the physician should be immediately sought.

For the artificial feeding of infants, cow's milk is the best of all foods, but it will need considerable modification. Its nitrogenous elements (casein, albumen, albuminoids) differ in character and amount from human milk, and it does not contain enough fat nor a sufficient amount of sugar.

For the new-born infant, therefore, cow's milk should be modified so it will resemble human milk as closely as possible in its physical characteristics, digestibility and nutrient qualities. The essential and necessary elements for the proper modification of cow's milk are: water, cream and sugar. Cane sugar may be used or milk sugar (lactose). If milk sugar is used, it will require about twice as much as cane sugar. Dextri-maltose may be

preferable to either cane sugar or milk sugar, and the amount required is the same as the amount of cane sugar required (dextri-maltose is malt sugar and dextrin, derived from digested starch). The advantages in the use of dextri-maltose in preference to cane sugar or milk sugar are that it does not cause gaseous distention nor diarrhœa; it does not readily ferment and is more easily digested.

To enable the nurse to readily and intelligently prepare suitable milk mixtures in the absence of specific instructions from the attending physician, the following diet lists are given. They represent mixtures which experience has shown to be suitable for the great majority of infants. Even when these particular mixtures do not agree with the child some very slight variation in the amount of milk, water or cream, will usually render the preparation acceptable or suitable for all requirements.

Diet Lists

(NOTE.—From the fact that the mother's milk does not ordinarily come into the breasts before the third day, it is evident that nature does not consider it necessary to supply the child with very much, if any, nourishment during that period. Probably the most essential requirement for the infant during the first three days in the way of feeding is the administration of water. It has become customary, whether essential or not, to give the child a mixture of water and sugar during the first three days, and since the sugar has some nutrient value, the mixture may serve to some extent the double purpose of food and drink.)

Diet for First Three Days

Milk sugar (lactose) 2 drams (2 level teaspoonfuls; if cane sugar is used only one-half as much is required)

Boiled water ..... 8 ounces

Give ½ ounce to 1 ounce every three hours. Eight feedings.

Diet from end of 3d day to end of 2d week

Milk..... 3 ounces (6 tablespoonfuls)
Milk sugar... ½ ounce (1 level tablespoonful)
Cream..... ½ ounce (1 tablespoonful)
Lime-water... 1 ounce (2 tablespoonfuls)
Boiled water sufficient to make the total amount 16 ounces (1 pt.).

Give 1½ ounces every two hours from 5 a.m. to 11 p.m. Ten feedings.

Diet from end of 2d week to end of 6th week

Milk..... 5 ounces (10 tablespoonfuls)
Milk sugar... ½ ounce (1 level tablespoonful)
Cream..... 2 ounces (4 tablespoonfuls)
Lime-water... 1 ounce (2 tablespoonfuls)
Boiled water sufficient to make total amount 20 ounces.

Give 2 ounces every 2 hours from 5 a.m. to 11 p.m. Ten feedings.

Diet from end of 6th week to end of 2d month

Milk	12 ounces
Milk sugar	$\frac{3}{4}$ ounce
Cream	5 ounces
Lime-water	2 ounces

Boiled water sufficient to make total amount 32 ounces.

Give 3 to 4 ounces every $2\frac{1}{2}$ hours from 5 a.m. to 10.30 p.m. Eight feedings.

Diet from end of 2d month to end of 5th month

Milk	20 ounces
Milk sugar	1 ounce
Cream	5 ounces
Lime-water	2 ounces

Boiled water sufficient to make total amount 32 ounces.

Give $4\frac{1}{2}$ ounces every 3 hours from 5 a.m. to 11 p.m. Seven feedings.

Diet from end of 5th month to end of 6th month

Milk	24 ounces
Milk sugar	1 ounce
Cream	3 ounces
Lime-water	2 ounces
Boiled water sufficient to make total amount 36 ounces.	

Give 6 ounces every 3 hours from 7 a.m. to 10 p.m. Six feedings.

Diet from end of 6th month to end of 8th month

Milk	28 ounces
Milk sugar	1 ounce
Cream	3 ounces
Lime-water	2 ounces
Boiled water sufficient to make total amount 40 ounces.	

Give 6½ ounces every 3 hours from 7 a.m. to 10 p.m. Six feedings.

Diet from end of 8th month to end of 12th month

Milk	36 ounces
Milk sugar	1½ ounces
Cream	3 ounces
Lime-water	2 ounces

Boiled water sufficient to make total amount 48 ounces.

Give 8 ounces every 3 hours from 7 a.m. to 10 p.m. Six feedings.

The *milk* in the above diet lists means whole milk; that is, ordinary milk which contains all its elements, including the cream.

The *cream* means the cream which rises naturally upon a bottle, jar, or pan of milk; this is called *gravity cream*. It does not refer to cream which has been separated from the milk by the centrifuge or separator process. Centrifugal or separator cream is harder to digest than cream which is allowed to rise naturally, due to the fact that the centrifuge or separator process introduces more or less air and changes the character of the emulsification.

Top Milk Mixtures

Another method of preparing cow's milk for the infant calls for top milk. Top milk has been defined in various ways, but in the diet tables here given, "top milk" means the upper half, or the top 16 ounces of a quart of milk after the bottle of milk has been allowed to stand in a temperature of 45 to 50 degrees for five or six hours. The top milk should be removed from the bottle with a small dipper made for the purpose and which may be purchased for a few cents. If a quart milk bottle, such as the milk-men use, is not available, the milk may be poured into an ordinary quart fruit jar and set in a cool place to allow the cream to rise.

Diet from end of 3d day to end of 2d week

Top milk	3½ ounces
Milk sugar	½ ounce
Lime-water	1 ounce
Boiled water sufficient to make total amount 16 ounces.	

Give 1½ ounces every 2 hours from 5 a.m. to 11 p.m. Ten feedings.

Diet from end of 2nd week to end of 6th week

Top milk	7 ounces
Milk sugar	1½ ounces
Lime-water	1 ounce
Boiled water sufficient to make total amount 20 ounces.	

Give 2 ounces every 2 hours from 5 a.m. to 11 p.m. Ten feedings.

Diet from end of 6th week to end of 2nd month

Top milk	14 ounces
Milk sugar	1½ ounces
Lime-water	2 ounces
Boiled water sufficient to make total amount 32 ounces.	

Give 3 to 4 ounces every 2½ hours from 5 a.m. to 10.30 p.m. Eight feedings.

Diet from end of 2nd month to end of 5th month

Top milk	20 ounces
Milk sugar	2 ounces
Lime-water	2 ounces
Boiled water sufficient to make total amount 32 ounces.	

Give 4½ ounces every 3 hours from 5 a.m. to 11 p.m. Seven feedings.

Diet from end of 5th month to end of 6th month

Top milk	24 ounces
Milk sugar	2 ounces
Lime-water	2 ounces
Boiled water sufficient to make total amount 36 ounces.	

Give 6 ounces every 3 hours from 7 a.m. to 10 p.m. Six feedings.

Diet from end of 6th month to end of 8th month

Top milk	30 ounces
Milk sugar	2 ounces
Lime-water	2 ounces
Boiled water sufficient to make total amount 40 ounces.	

Give 6½ ounces every 3 hours from 7 a.m. to 10 p.m. Six feedings.

Diet from end of 8th month to end of 12th month

Top milk	36 ounces
Milk sugar	2 ounces
Lime-water	2 ounces
Boiled water sufficient to make total amount 48 ounces.	

Give 8 ounces every 3 hours from 7 a.m. to 10 p.m. Six feedings.

Modern Obstetrical Nursing

REGULATING THE INFANT'S DIET IN RESPECT TO CONSTIPATION, DIARRHOEA, VOMITING, COLIC, WORRYING, REFUSAL OF NOURISHMENT

ADMINISTRATION OF FOOD

BARLEY WATER, RICE WATER

OATMEAL WATER, CONDENSED MILK

WHEY AND CREAM

HUMANIZED MILK, ALBUMIN WATER

ALBUMINIZED MILK

SELECTION AND CARE OF MILK

FARINACEOUS OR STARCHY FOODS

OVERFEEDING BOTTLES AND NIPPLES

CARE OF PREMATURE INFANTS

SERIES FORTY-NINE

Modern Obstetrical Nursing

By EUGENE UNDERHILL, M.D.

Author of A Text-book of Anatomy;
Infectious Diseases and Their Management;
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The Graces of the Nurse;
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Regulating the Infant's Diet
Making Changes in the Milk Mixture

Any diet list, however carefully worked out, will not suit the requirements of every infant. At best, diet lists should be considered merely as suggestions, and while they may furnish a practical working basis and actually meet the needs of the majority of children, yet it must be remembered that every child is a law unto itself, and at any moment the doctor, the nurse, or the mother may be called upon to make some change in the milk mixture.

In making changes in the milk mixture some specific facts should be understood and kept in mind, such as:

1. Constipation
2. Diarrhoea
3. Vomiting
4. Colic
5. If the child worries between feedings
6. If the child refuses nourishment
7. Guiding factors

1. *Constipation.*

If the child is constipated, and it appears that the diet is the actual or contributing factor, the condition can often be promptly relieved by the addition of a little more cream to the milk mixture; or if the milk mixture is made with milk sugar (lactose) or with dextri-maltose, the constipated condition may be relieved by substituting cane sugar, or a small quantity of oatmeal water may be substituted for a portion of the lime water in the milk mixture.

If all of these measures fail in relieving the condition, mechanical measures may be tried, of which the best is the use of a gluten or glycerin suppository; in an emergency a soap suppository may be tried—sharpen a piece of soap like a lead pencil, insert into the rectum and retain it there 15 to 20 minutes, or longer. The injection of a small quantity of soapy water may be tried or an enema of olive oil.

CAUTION:—Do not administer drugs of any kind without specific directions from the physician. Some people are quick to administer a dose of castor oil for this condition; this is especially harmful as it is immediately

followed by still more obstinate constipation. Only the doctor may be expected to have the knowledge necessary to decide when this or any other drug may be safely and effectively used for this condition.

2. *Diarrhoea.*

If diarrhoea occurs, the first thing to be thought of for the correction of this trouble is to consider whether or not the child is taking the food too fast. Taking the food too fast is a fruitful cause of diarrhoea and is easily corrected by regulating the administration of the food.

Taking too much food is also a frequent cause of diarrhoea.

The next thing to be thought of is to lessen the amount of cream in the milk mixture.

The substitution of barley water for a portion of the plain water in the milk mixture may promptly correct the difficulty.

If none of these measures succeed, the milk may be brought to just the point of boiling.

NOTE:—Watch carefully the effect of milk which has been brought to the boiling point or actually boiled, as it is much harder to digest.

If the stools contain large curds, the situation may be controlled by substituting barley water for all the lime-water and plain water in the milk mixture.

Sometimes the trouble may be corrected by peptonizing the milk in the milk mixture.

The doctor may advise irrigation of the lower bowel with a view of washing out toxic elements that may be concerned in causing the trouble. To irrigate the bowel, place the child in the dorsal position, oil and gently insert into the rectum a soft rubber catheter. If the child is six months of age, the catheter may be gently pushed up from five to seven inches. Insert the nozzle of a fountain syringe into the end of the catheter and allow 10 or 12 ounces, or such amount of whatever solution the doctor may have advised, to flow slowly into the rectum. Some of the solutions used in this way are: plain water, luke warm, cold, ice cold, or medicated, and normal salt solution.

In all cases of diarrhoea, redouble the efforts to maintain sterile conditions of bot-

tles, nipples and all utensils used in the preparation and handling of the milk mixture.

All discharges from the bowels should be removed from the room at once and if the child's clothing is soiled by the discharges or the odor of the discharges clings to the child's garments, such clothing should be immediately changed.

NOTE:—The normal appearance of the bowel discharges is at first dark, gradually becoming lighter, possibly somewhat greenish, then brownish in color and gradually becoming of a yellowish or golden yellow hue and of a semi-solid consistency.

The normal odor is quite similar to the odor of sour milk and unless the child is suffering from some disease or the digestion is markedly deranged the odor is not particularly offensive.

One good bowel movement a day is sufficient and normal, but some children keep in health and have as many as three or four a day.

3. *Vomiting.*

If the vomited matter is plain milk, it may indicate that the food was taken too fast, that too much food was taken, or that

the milk mixture was too strong. The proper regulation of these factors will promptly correct the trouble.

If the vomited matter contains large curds and the child has a tendency to diarrhoea, add more lime-water or substitute barley-water for some of the plain water. Add oatmeal-water in place of the lime-water, if the child has a tendency to constipation.

If the vomiting persists and is quite free soon after every feeding, it may become necessary to withhold milk entirely for a few feedings and administer equal parts of barley-water and whey, adding a third to a half a teaspoonful of dextri-maltose or milk sugar to each feeding.

4. *Colic.*

Unless colic is frequent and severe, it may not indicate that the milk mixture is particularly at fault. Simply administering the milk a little more slowly will frequently correct the trouble.

During an attack, the administration of

quite warm water by the teaspoonful will often relieve.

Heat to the abdomen and to the feet will often give prompt relief.

A broad binder or bandage around the abdomen will generally relieve the pain.

In many cases, holding the child in an upright position with the head over the nurse's shoulder will cause an escape of gas by the mouth, and a quick disappearance of the trouble.

5. *If the Child Worries Between Feedings.*

If the child worries between feedings it indicates that the intervals between feedings are too long, or that too little nourishment is given, or that the milk mixture is too weak.

6. *If the Child Refuses Nourishment.*

If the child refuses nourishment it indicates that the intervals between feedings are too short, or that too much nourishment was given, or that the milk mixture is too strong.

7. *Guiding Factors.*

The condition of the child and the effect of the mixture are the guiding factors. Water is sometimes harder for the child to manage than the milk. In such instances the lessening of the quantity of water and substituting milk in its place will often do better than the particular mixture of milk and water that is usually considered the correct proportions.

Systematic Administration of Food

The following table shows concisely the intervals at which children should be fed, the number of feedings in 24 hours and the average amount of each feeding, for different ages:—

Age	Interval	Number of feedings in 24 hours	Average amount at each feeding
First 3 days	3 hours	8	½ to 1 oz.
From 3d day to end of 2nd week	2 hours	10	1½ ozs.
From end of 2nd week to end of 6th week	2 hours	10	2 ozs.
From end of 6th week to end of 2nd month	2½ hours	8	3 to 4 ozs.
From end of 2nd month to end of 5th month	3 hours	7	4½ ozs.
From end of 5th month to end of 6th month	3 hours	6	6 ozs.
From end of 6th month to end of 8th month	3 hours	6	6½ ozs.
From end of 8th month to end of 12th month	3 hours	6	8 ozs.

Barley Water, Rice Water, Oatmeal Water

Some physicians will order *barley, rice* or *oatmeal water* to be substituted for some of the plain water in the preceding formulas.

To prepare *barley water*, put two tablespoonfuls of pearl barley in three pints of water. Boil for three hours, or until it is reduced to one pint. Strain through a fine wire sieve lined with cheese cloth.

Rice water may be prepared in the same manner.

To make *oatmeal water*, add 1 tablespoonful of oatmeal to three cupfuls of water. Boil down to one-half the original quantity of water, and strain.

Barley water, rice water or *oatmeal water* will be suitable in many cases for use in place of some of the plain water or the lime-water, especially after the child is four or five months of age.

Condensed Milk

Condensed milk is an important food for infants, but in general, it is not as valuable as cow's milk modified according to the preceding formulas. Condensed milk is the easiest to keep on hand, and it is easily prepared.

For the new-born infant, stir one teaspoonful of the condensed milk into sixteen teaspoonfuls of hot water. It is often of value for temporary use in emergencies.

Whey and Cream

Another infant food, useful especially for emergencies, is whey and cream. Mix one part of cream in twelve parts of whey.

The cream thus used should be very rich. If it contains any milk, it will form curds in the whey.

To prepare *whey:*

Take a pint of milk, heat to luke-warm. be careful not to get it too hot, it should

be the same temperature as when first drawn from the cow; stir in two teaspoonfuls of the essence of pepsin or rennet and let stand until firmly curdled; then break it up thoroughly with a fork and strain through a wire sieve lined with a double thickness of cheese-cloth.

Humanized Milk

This is prepared in the following manner:

Take a pint of fresh milk, set in a cool place and allow the cream to rise, skim off the cream, then make whey from the skimmed milk; now mix together the whey and the cream which was previously skimmed off the milk from which the whey was made, and add the mixture to a pint of fresh cow's milk.

Humanized milk, so called, will agree with some children when other milk mixtures fail. The humanized milk may be given full strength or diluted with plain water, barley water, or oatmeal water, according to the age or requirements of the child.

Albumin Water

Albumin water is sometimes administered to infants as a temporary measure when milk mixtures disagree, or when other food cannot be retained.

To make *albumin water:*

> Put the whites of two eggs into a jar with a half pint of water, put on the cover of the jar and shake thoroughly and strain. A little milk sugar or cane sugar may be added to improve its palatability.

Albuminized Milk

Albuminized milk is sometimes used properly diluted with plain water, lime water, barley water, or oatmeal water, according to the age and requirements of the child.

To prepare *albuminized milk:*

> Put the white of one egg into a jar with a half pint of milk, cover the jar and shake thoroughly.

Selection and Care of Milk

The milk used for the infant should be selected and guarded very carefully.

It should be from a healthy cow. The udder should be washed before milking. The milk should be drawn with clean hands and received into a perfectly clean vessel. It should be strained and cooled as quickly as possible, without being covered, save by a piece of gauze, which should be washed before milking. The milk ing it should be kept cold and covered.

It is considered better to feed the baby on milk from a herd of cows than from a single cow. The reason for this is, if one cow in a herd is affected with a fever or any condition which modifies the character of the milk, it would not be so likely to affect the baby; whereas, milk given from one cow affects the child more directly. Moreover, if the child is taking the milk from one cow and that cow becomes sick or is injured, a change of milk is

necessitated, which would not occur if the milk was secured from a herd.

The milk should not be allowed to stand in damp or mouldy cellars, or near drain-pipes or bath-rooms. It should not stand near cabbage, onions, cantaloupe, bananas, cucumbers or other fruits or vegetables, which might cause contamination or impart a flavor.

Farinaceous or Starchy Foods

A child under three months of age would scarcely be able to digest any food other than milk, as it does not have saliva, which is necessary to digest starchy foods. Indeed starchy foods are of very doubtful value to a child under five months of age except in the form of properly prepared and strained watery solutions for additions to milk mixtures. But when the child has reached or passed the age of five months, then a small portion of starchy foods, such as oats, rice, barley and many of the proprietary foods, properly prepared,

are of value, pleasing the palate, strengthening the tissues and increasing the bodily weight.

The proprietary foods will have their own special directions, which should be carefully studied and followed.

The following is a very good home preparation of a starchy food:—

> Boil thoroughly (not less than two hours) a cupful of oatmeal with three cupfuls of water, and strain. A child seven months of age may be given equal parts of water, milk and the strained oatmeal, adding a little sugar.

Rice or barley, well cooked, might be used in place of the oatmeal. The proportions given must be varied to suit different children and different ages. A child one year of age would likely be able to take strained oatmeal and milk in equal parts without the addition of water.

Guard Against Overfeeding

Great care should be taken that children are not overfed. Anxious parents sometimes urge the child to take food beyond a proper amount to the great detriment of the child.

CARE OF BOTTLES AND NIPPLES

Bottles and nipples should be kept absolutely clean. The baby will need at least two bottles and two nipples.

The bottle should not have any pronounced shoulder, but should taper directly from the opening so that every part of the bottle may be reached and cleansed with a special brush, which may be purchased for this purpose.

As soon as possible after using the bottles rinse them with cold water and then they should be washed with the brush, hot water and soap. They should then be boiled from 10 to 20 minutes.

Then fill the bottle with sterile water containing a half teaspoonful of baking soda, and let it

stand until needed again. It should then be well rinsed in plain boiled water.

Nipples, likewise, should be scrubbed with a brush, hot water and soap, inside and outside, and boiled for ten minutes after each feeding. They should then be put to soak in a cup of sterile water containing a half teaspoonful of baking soda. Before using again, they should be well rinsed in plain sterile water.

No laxity whatever should be permitted in the care of the baby's bottles and nipples, as they offer a most suitable place for the development of disease germs, which would easily be conveyed to the child.

CARE OF PREMATURE INFANTS

Premature infants require special care. Compared with the child born at full term, the premature infant requires to be

(a) Kept warmer
(b) Handled less
(c) Fed with lighter food

The proper care and management of a child born any considerable time prematurely may require the use of an incubator.

An incubator may be purchased already made, and will be neater and more easily managed than the home-made kind. But a very good one may be made at home in the following manner:—

> Take a box or closely-woven clothes basket of suitable size, line it with paper, put in two blankets and a pound of absorbent cotton. The baby should be wrapped in the cotton and covered with another blanket, leaving a small opening for the admission of sufficient air for the child to breathe.
>
> Hot water bottles, six in number, should be put inside the box under the blanket, but some distance from the child.
>
> The hot water bottles should be put into the box at a temperature of 98 degrees. One bottle should be renewed every half hour, so that each bottle will be renewed every three hours. This keeps the incubator at an even temperature.

A child born considerably too soon should have its eyes, nose and mouth properly cleansed, be anointed with olive oil or lard, the cord dressed, bandage applied, and then wrapped in cotton and placed in the incubator.

A napkin or a loose piece of cotton should be placed under the child to receive its discharges.

The feeding of the premature infant can sometimes be done at the mother's breast. If the child seems strong it may be taken from the incubator and allowed to nurse.

Sometimes the mother's milk may be drawn in a clean, warm breast pump, and fed to the child by means of a spoon, or it can be dropped into the baby's mouth by means of a medicine dropper. The dropper should be cleansed and treated the same as a bottle and nipple.

If the premature child must be fed on artificial food, the milk mixture should not be quite as strong as that required for a child at full term.

Modern Obstetrical Nursing

THE WET NURSE

URINE AND BOWEL MOVEMENTS

DUSTING POWDERS

DRAFTS

WEIGH THE BABY

LIFTING THE BABY

THE BABY'S BATH

CARE OF BABY'S MOUTH

CARE OF BABY'S EYES

THE UMBILICAL CORD

THE BREASTS OF INFANTS

THE FONTENELLES

SERIES FIFTY

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THE WET NURSE

A *wet nurse* is one who suckles the child born to another woman. If a mother does not have milk for her own child, a suitable wet nurse is a good substitute.

A wet nurse, to be suitable, should be cleanly, free from disease, and her own child should have been born about the same time as the child she is to nurse.

She should have a thorough examination by a physician to make sure that she is free from disease.

URINE AND BOWEL MOVEMENTS

The nurse should note the first passage of urine and the first movement of the bowels of the newborn infant. The physician will likely make early inquiry about these, as the canals are sometimes obstructed and may need to be opened.

When the infant has passed urine once, it may

not pass any more for several hours or until it has taken some nourishment.

If there should be actual retention of urine, warm water should be administered freely, and warm fomentations may be applied over the kidneys.

In severe cases the child may be held in a sitting posture in a basin of warm water for four or five minutes.

Sometimes the doctor will advise flushing the bowels with a saline solution.

Sometimes the child's urine will contain a sediment which is often referred to as brick-dust sediment. This sediment tends to stain the napkins a slightly brownish, or a reddish brown, color. This condition indicates that the child needs more water.

When changing the diaper, a clean one should always be used. The use of diapers which have

been wet with urine and dried without washing may set up considerable irritation. A serious case of eczema may even be caused in this way.

The child's bowels should move at least once a day. They should not be allowed to go without movement longer than twenty-four hours. If they do not move naturally some measures should be adopted to move them.

Olive oil or castor oil, a half teaspoonful to a teaspoonful, may be prescribed by the physician, or he may direct that a very minute portion of licorice powder mixed in hot water be given to the child.

A glycerin or gluten suppository, or a suppository made of soap cut into the shape of a sharpened pencil, and an inch in length, may be inserted into the rectum.

The child's napkins should be changed as soon as soiled.

DUSTING POWDERS

Dusting powders are frequently used on the baby—probably much more frequently than necessary. They may be of some benefit when there is chafing, or redness of the skin; or when the skin is irritated by the sweat or urine; but the excessive use of powder when there is no special indication for it is not recommended—it obstructs the pores and glands of the skin.

Rice powder or plain cornstarch will usually be all that is necessary for dusting powder. If that is not sufficient for those cases where the sweat and urine irritate the skin, the following mixture may be dusted on as needed:

Magnesia Oxid . . . . . 1 dram.
Subnitrate of Bismuth . . . . . 2 drams.
Cornstarch . . . . . 8 ounces

AVOID DRAFTS

Drafts of air about the baby should be avoided.

Never keep the baby between an open door and

an open window. There will always be a draft there, even though not readily perceptible.

Never hold a baby at an open window, however warm the day may be.

Never fan a baby.

Special care must be taken to avoid drafts or too much exposure when washing or dressing the baby.

WEIGH THE BABY

It is a good plan to weigh the baby once a week.

The baby will likely lose a trifle in weight during the first week and then gradually gain until the 10th or 11th day, when it should again weigh as much as at birth; thereafter the average child that is doing well will gain about a quarter of a pound each week for several months.

Some babies lose scarcely any in weight during the first week, or if they do, they regain it in a very short time—three or four days.

Premature infants lose more and are longer in regaining it.

The average normal weight for the new-born child is seven pounds for a girl, and seven one-third pounds for a boy. (The normal length is 20 inches.)

Loss in weight, or no gain in weight from week to week, will often be the first indication that the food is not suitable or that some more or less serious illness is approaching.

LIFTING THE BABY

To lift an infant, support its head, back and shoulders, with one hand and arm, and place the other hand under the buttocks.

The habit of lifting an infant by catching it under the arms, and thus permitting the head and hips to be unsupported is entirely too common. It may, and likely does, injure the spinal column in some cases.

THE BABY'S BATH

As a general rule, the baby should have a full bath every day. The body, however, should not be entirely immersed in water until after the cord has come off and the umbilicus is thoroughly healed. It is not essential at any time to immerse the body in water, if the sponging is free and thorough. Do not rub the skin as it may injure the delicate epidermis and cause more or less continuous irritation and may even set up eczema. In drying the skin, use a soft cloth and pat it until the moisture is taken up.

Give the bath, if possible, in the morning, midway between two periods of nourishment.

Have the room warm; no drafts of air. At first use water at a temperature of about 98 degrees—the temperature of the body. As the child grows older and more vigorous the temperature may be reduced to 90 degrees, or even lower.

Not very much soap is needed; that which is used should not be medicated or scented.

In bathing little girls be careful not to injure the external genitals by too much pressure or by using rough cloths or towels. The labia (See Fig. 1) should be separated slightly and the secretions carefully and very gently removed.

In bathing little boys, the foreskin should be drawn back, the part underneath washed lightly, quickly dried and the foreskin replaced. If the foreskin is adhering or is long and tight so that it cannot be pushed back, then the child should be circumcised. A child with a long or tight foreskin will not likely develop properly, but will be fretful and sickly.

The child's scalp should be washed occasionally with lukewarm water. Sometimes a yellow crusty material is found on the scalp. This should be greased in the evening with petrolatum (vaselin), and in the morning the scalp should be washed a little and very gently rubbed with a soft cloth, avoiding pressure. Repeat this every one or two weeks. The affected area will gradually clear up.

A soft brush (frequently cleansed) should be used for the hair.

In cleansing the ears be very careful not to allow water or soap to lodge in the canal of the ears and remain there, as this would tend to interfere with the hearing. The canals should be thoroughly dried; a pledget of absorbent cotton is effective for this purpose. In introducing the cotton or other material for drying the canals, do it very gently, otherwise it may injure the membrane and cause deafness. A wire hairpin or other metal substance should never be introduced into the child's ears.

CARE OF BABY'S MOUTH

The baby's mouth may be washed once or twice a day.

The mouth of a very healthy baby will require but very little attention except during periods of indigestion until after the teeth appear. In cleansing the mouth, care should always be exer-

cised not to injure the delicate membranes and to be very sure that the nurse's finger, gauze, cloth, or other material that may be used, are in no way liable to introduce infection.

Fold a soft cloth over the end of the finger, wet it with lukewarm sterile water and rub it thoroughly, but gently, over the entire cavity of the mouth, washing the roof, tongue, gums and the inside of the cheeks.

In general, plain lukewarm sterile water is sufficient for the mouth wash. If anything further seems to be required by any special condition, and the physician does not direct what to use, then one of the following may be employed:—

A weak solution of boric acid and water;

1 or 2 drops of the tincture of myrrh in a half cup of water;

2 or 3 drops of alcohol in a half cup of water;

A weak solution of bicarbonate of soda may be used;

A light wine-colored solution of permanganate of potassium and water;

A weak solution of borax and water may be employed occasionally, but if it is used very often or in strong solution, it will cause soreness of the mouth.

CARE OF BABY'S EYES

The eyes should be washed each day, using plain lukewarm sterile water, or boric acid solution.

The eyes should be carefully watched each day to detect the first sign of any redness or any unnatural discharges.

Neglect in caring very early for sore eyes frequently results in serious damage and sometimes in a complete loss of vision.

Many of the blind adults became blind through carelessness or neglect in the cleansing of the eyes in infancy by their caretakers.

At the first indication of any redness or soreness of any kind or discharge from the eyes, the doctor should be notified and the eyes immediately washed with boric acid solution. Make a saturated solution of the boric acid in sterile water. Put several drops of it in the eyes every one or two or three hours as the symptoms may seem to demand or as the doctor may direct. The boric acid solution will not do any damage to the eyes, however much or frequently it is used.

A medicine dropper is convenient for dropping the medicine in the eyes, but if that is not at hand, use a teaspoon, or a piece of sterile gauze or absorbent cotton may be saturated with the medicine and gently squeezed over the eye. If the cotton should touch the eye do not use it again; but take a clean piece.

Infants having purulent discharges from the eyes soon after birth—*ophthalmia neonatorum*—are likely infected by poisonous discharges from the mother.

If only one eye is infected, great care should be taken that the other does not become so by the discharge accidentally entering the sound eye. Sometimes the baby will rub its hands first against the sore eye and then rub the poison into the sound eye.

These very serious cases may need other applications in addition to the boric acid. Of course the physician will direct the treatment. *Nitrate of silver*, called also *argentum nitricum*, is frequently used for the serious cases, but if strong solutions are employed they must not be allowed to touch the cornea or the vision may be destroyed.

A solution of nitrate of silver of the strength of 1 grain in 1 ounce of distilled water may be employed safely, and will give very good results. Put 1 drop of this in the eyes each morning and evening. The water in which it is mixed must be distilled.

A stronger solution of nitrate of silver, for example, 5 grains in 1 ounce of distilled water—that

is, about 1 per cent.— is sometimes ordered by the physician. This strength is on the border line of danger, if used very liberally.

For the very serious cases the physician will sometimes employ a 2 per cent. solution, that is, about 10 grains in 1 ounce of distilled water. The nurse must remember that this strong solution must not be allowed to touch the cornea. To use it, evert the lids, hold the upper and lower lids thus everted close together, and brush them lightly with cotton twisted on a probe and wet in the solution; wash off at once with boric acid solution or a normal salt solution.

Argyrol (a silver compound) is sometimes prescribed for use in the eyes in solutions of the strength of 10 to 20 per cent.

THE UMBILICAL CORD

The *umbilical cord* cut and properly dressed will usually slough off in four to seven days.

The cord must be allowed to slough off entirely. Do not attempt to pull or cut even the last shreds.

After the stump of the cord has come off, wash the *navel* with sterile water, cover it with a pad of aseptic gauze and apply the belly band.

If the navel has not entirely closed, or if there is pus or any discharge, the doctor's attention should be called to it, as it must be dressed and cared for in the same manner as any wound. Cleanse it as often as necessary, possibly several times a day, using boric acid solution, or a weak bichloride of mercury solution (1 to 10,000), or peroxide of hydrogen, and dress with aseptic gauze. Usually, however, in such a case the doctor will direct the care and treatment, but assiduous care and absolute cleanliness on the part of the nurse are essential in order to secure the best results from the doctor's treatment.

THE BREASTS OF INFANTS

The *breasts of infants* sometimes swell, become painful and secrete a milky fluid. This is just as

likely to happen in male children as in female children. Do not attempt to squeeze out this material. Apply camphorated oil, massage very gently and bandage if necessary.

THE FONTENELLES

The *anterior fontenelle* is the opening between the bones at the center of the top of the head.

The *posterior fontenelle* is at the vertex. (The vertex is the crown or top of the head.)

These openings give space for the development of the brain, and it is a matter of serious consideration if they should open further or should close too soon.

If they should open further, it would probably mean poor nourishment, hydrocephalus or rickets.

If they should close too soon, it would probably cause imbecility or epilepsy.

In the average case the *anterior fontenelle* will normally close near the end of the second year.

The *posterior fontenelle* should close about the time of birth.

A large *posterior fontenelle* at birth may be a sign of premature birth.

Modern Obstetrical Nursing

DENTITION, CARE OF BABY'S TEETH

BABY'S FIRST OUTING

HOW TO HOLD BABY

SUPPORTING THE HEAD, ROCKING BABY

SITTING ALONE, TALKING, WALKING

CHANGES IN TEMPERATURE

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FOODS EXCLUDED FROM THE DIETARY

BABY'S EYES BABY'S LAUGH

BABY'S CRY BABY'S HANDS

SERIES FIFTY-ONE

Modern Obstetrical Nursing

By EUGENE UNDERHILL, M.D.

Author of A Text-book of Anatomy;
Infectious Diseases and Their Management;
Nursing—The Heart of the Art;
The Graces of the Nurse;
Sick-room Care and Practice, etc.

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DENTITION

In the average child the teeth will begin to erupt about the age of six months.

This eruption of teeth will probably be preceded and attended with fretfulness, feverishness, disorder of stomach and bowels, sudden starting in sleep, biting, etc.

In some cases, especially when there is improper feeding, the child may have convulsions.

The eruption of the teeth may be favored by allowing the child to have a ring of rubber or bone on which to bite.

The first set of teeth, twenty in number, are called milk teeth or deciduous teeth.

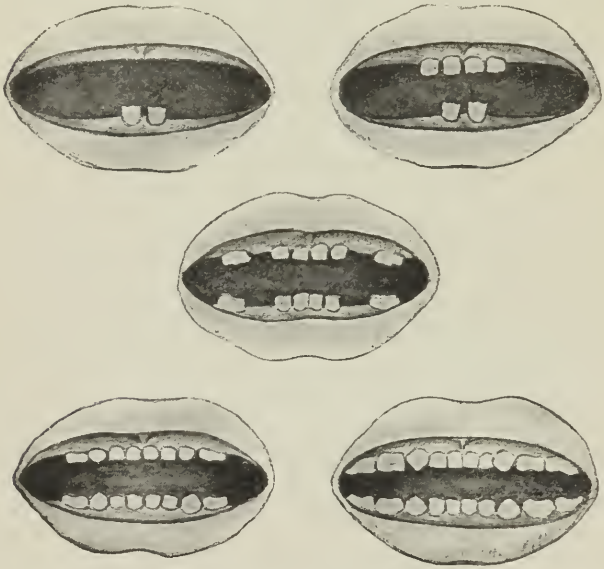

FIG. 49 — Normal Dentition.
(Frühwald and Westcott.)

Approximately they erupt in the following order:—

Central lower incisors...	5th to 8th month.
Central upper incisors..	6th to 9th month.
Lateral incisors.....	7th to 10th month.
First molars.....	11th to 14th month.
Canines	15th to 20th month.
Second molars	20th to 30th month.

Permanent teeth, thirty-two in number, sixteen in each jaw, erupt about as follows:—

First molars (2 upper and 2 lower) .	5½	to	7 yrs.
Central incisors (2 up. and 2 low.) .	6	to	8 yrs.
Lateral incisors (2 up. and 2 low.) . .	7	to	9 yrs.
First bicuspids (2 up. and 2 low.) . .	9	to	10 yrs.
Second bicuspids (2 up. and 2 low.) .	10	to	11 yrs.
Canines (2 upper and 2 lower)	10	to	13 yrs.
Second molars (2 up. and 2 low.) . . .	12	to	14 yrs
Third molars (wisdom teeth, 2 upper and 2 lower)	17	to	30 yrs.

Care of Baby's Teeth

The teeth should be cleansed morning and evening, using a soft brush, and cool water.

Occasionally use a cloth folded over the finger instead of the brush to wash the teeth.

BABY'S FIRST OUTING

The baby's first outing may be taken simply by being carried through other parts of the house if there is not too great a difference in the temperature of the other rooms.

A baby a month old may be taken out of doors in favorable weather.

If properly wrapped and shielded from the wind, quite young babies may spend much of the time out of doors in cool, and even in cold weather, taking their morning and afternoon naps in the open air.

In hot weather take the child out in the cool of the mornings and evenings. City babies may be taken to the parks, along rivers, near fountains, etc.

How to Hold Baby when Feeding Artificially

The best position to hold the child when feeding it artificially is a semi-recumbent position—as the mother would hold it when nursing at the breast.

Supporting the Head

Rocking the Baby

The baby will begin to support its own head when about three or four months of age. Before that time the head should be carefully supported.

Do not rock the baby; it often disturbs digestion, particularly soon after feeding. It has an unfavorable effect upon the eyes and may frequently be a factor in retarding the proper development of the brain. Jolting or swinging the baby to and fro, is also a harmful practice. These movements are in no wise necessary for any purpose whatever. If there is anything wrong with the baby, such movements have a tendency to increase the trouble.

When the child is put to bed or laid down for sleep, allow it to lie quietly, the same as would be done in the case of an adult; remove the light from the room, or if it is daytime, carefully shield the child from the light.

Sitting Alone, Talking, Walking

The average baby will be able to sit alone when about eight months of age, and to take a few steps and say a few words when about one year of age.

Children should not be urged to stand or to walk too soon. It might cause bow legs. The

normal child will make every effort to use the legs as soon as possible.

Alarm should not be felt if the baby does seem bow-legged. Even very crooked legs will usually become straight if the child receives proper food, care and exercise.

In most cases it will be better to depend on proper care to straighten the legs, rather than resort to stiff shoes, braces, operations, etc. These will tend to limit the use of the legs and thus prevent their natural development.

Protect Against Changes in Temperature

The child should wear a flannel bandage about the abdomen to protect it from sudden changes of temperature. This should be continued until near the end of the second summer.

Management of Vomiting and Purging

If the child should vomit and purge, as it is likely to do during dentition, especially in summer when there are sudden changes in temperature, it

will be well to omit one or two meals entirely. Then begin very carefully on some food lighter than the child was accustomed to taking, probably toast water, white of egg in water, barley water, whey, or diluted milk.

Keep the feet and abdomen comfortably warm. Do not move the child any more than necessary. Encourage sleep.

SUBSTITUTING TABLE FOOD FOR INFANT FOOD

Substituting ordinary table food for infant food is a matter of considerable importance, but it is frequently done with recklessness and is followed by direful results. The excuse offered in many cases is that the child cries for banana or some other unsuitable food. It is not likely that a child will cry for a particular food unless it has first been allowed to partake or taste of it. Children who partake of unsuitable food, and different incompatible foods, may be expected to have

stomach and bowel troubles, convulsions and many other dangerous affections.

A child under the age of one and a half years, should not know even the taste of any other food than the strictly infant foods.

From one and a half to two and a half years of age, milk and the other infant foods should still constitute the chief articles of diet, but the child may be allowed to partake at first in very small portions guardedly, and later more liberally, of the following articles:—

Bread and milk } (bread at least one
Bread and butter } day old)
Toast bread softened with milk and buttered
Soft-boiled egg—a small portion of the egg
Poached egg—a small portion of the egg
Yolk of egg soft boiled, mixed while hot with bread crumbs
Junket

Rice and milk (rice must be thoroughly cooked)
Rice and milk pudding
Oatmeal and milk (oatmeal must have a long cooking, and only a very small portion should be given at one time)
Beef tea
Mutton broth
Chicken broth
Baked potato, buttered or moistened with plain brown gravy
Mashed potato
Lamb and other tender meats (guardedly and in very small portions)
Grape juice
Apples, raw, baked or stewed
Peaches
Plums (guardedly)
Ice cream, vanilla flavor or plain

The foregoing list of articles must be regarded simply as suggestions. Many children will not do well on anything but milk up to two and a half, and even three years of age. Moreover, no fear of insufficient nutrition need be entertained if the

child is kept exclusively on a milk diet, provided enough milk is taken.

If the child becomes ill, as a result of digestive disturbance while subsisting in part upon solid or semi-solid foods, usually all that is necessary to correct the trouble is to promptly return to an exclusive milk diet.

A child should not be fed entirely on ordinary table food before the end of the third year.

FOODS and ARTICLES to be EXCLUDED from the DIETARY of YOUNG CHILDREN

Among foods and articles NOT SUITABLE for the dietary of young children are:—

Tea, coffee, cocoa, chocolate
Pork, sausage, corned beef
Cabbage
Bananas
Cheese
Nuts

Fruits with small seeds
Fried foods
Foods that are very greasy or highly seasoned
Pies, cakes, candies
Wine, beer and all alcoholics

The constant or frequent mincing of food of any kind should not be allowed, as it irritates the stomach and interferes with the proper action of the gastric juices.

Children's meals should be served as agreeably as possible, avoiding all excitement, worry and haste.

"A LITTLE CHILD"

The Great Physician illustrated an important truth by calling "a little child unto Him." "Then were there brought unto Him little children, that he should put his hands on them." The dignity and importance of the care of children is here illustrated or suggested.

The high-water mark in nursing excellence may be reached in the proper and scientific care of children. It is a service which stirs and awakens the deepest impulses of the soul and presents opportunities for usefulness and for personal development not found in any other department of human endeavor.

Viewed from any angle the child is an interesting and fascinating study. Its life presents at once a history and a prophesy, enveloped in more or less of mystery. To the trained and skillful observer both the history and the prophesy are open books.

In some measure four factors may be said to present the key to this little book of human mystery; they are:

Baby's eyes
Baby's laugh
Baby's cry
Baby's hands

Baby's Eyes

"It was a blue-eyed baby"—so say the mothers even of most of the dark-eyed "grown-up children." As soon as the baby came, if any one had looked closely, it would have been noticed that the baby had sky-blue eyes,—"came from Heaven," so the good folks say. In a little while the eyes change, some very quickly, others gradually, to the color which shall persist and be characteristic of the individual through life.

The child comes from darkness to light, and the first thing that baby notices is the light. In a few days, if permitted to do so, it will look long and earnestly at the light—too long for its own good unless the thoughtful nurse turns its head in another direction.

All babies have diplopia (double vision). They see two of everything. This is illustrated when the child grows older and is able to take hold of things, it will grasp an object handed to it and immediately reach out the other hand as if to

take another object. It sees two things where there is only one, and a look of surprise may often be noticed on the child's face when it finds it is unable to grasp the other object which it seemed to see. It is only by experience that we all learned to unite the two images of an object into one.

When baby is pleased or displeased, the eyes show it first.

If the eyes are clear and bright, and close completely during sleep, it is a favorable indication. If the eyes are dull and lustreless and remain partly open during sleep, it is an unfavorable sign.

When the eyes move quickly from side to side, it indicates painful colic or temporary disturbance of digestion.

When the eyes roll slowly from side to side and turn far upward, showing a large portion of the whites of the eyes, it indicates profound systemic disturbance of a digestive character.

When the eyes roll upward and remain partly open and at the same time the head is thrust backward into the pillow, it indicates the encroachment or beginning of some serious disease.

When in disease the eyes remain wide open during sleep, it is an unfavorable sign and often prophesies the beginning of the end of a fatal disease.

Baby's Laugh

Baby's first laugh is a smile—smiles in its sleep —"angels whispering to it," some folks say; just a common-place, ordinary "colic," others say. Both may be right, but if the baby is perfectly well, take the "angel" view.

All healthy babies are inclined to laugh. They are disposed to take life as one big joke. It is surely for them a good time and a happy time if they are well.

If baby rarely or never laughs it is an unfavor-

able sign. It means that the vital forces are low or that actual disease is present or imminent.

There is no music like baby's laugh. It proclaims eloquently the nurse's or mother's efficient care; tells of developing muscles and the rapid expansion of physical and mental powers.

Baby's Cry

A whining cry at birth indicates imperfect expansion of the lungs or a premature baby.

A whining cry later indicates illness and general debility.

A sharp piercing cry indicates illness involving the brain.

A loud, rather sharp and impatient cry, with quick movements of the arms and kicking, indicates hunger.

A loud, sharp, paroxysmal and grinding cry with the legs drawn up and the abdomen hard, indicates colic.

A fretful, rather low cry, with occasional loud, sharp cries, indicates indigestion and teething troubles.

A loud, continuous, boring cry, with occasional piercing shrieks, indicates pain such as that which might be caused by an unfastened safety pin, or other sharp substance or instrument.

A whistling, metallic cry, indicates obstruction or disease in the respiratory passages.

A continuous, low, moaning cry, indicates actual or approaching serious illness involving the digestive tract.

A low, sobbing cry, indicates exhaustion or a desire to be fondled by the mother, the nurse, or other friend.

A sudden, loud shrill cry, indicates fright or fear.

A series of loud, sharp cries, with kicking and

momentarily stopping the cries and then continuing longer and louder, indicates anger.

A peevish, fretful, worrying cry, indicates sleepiness.

Sudden crying during sleep or on partially awakening, indicates spasmodic colic, earache, retention of urine, or bad dreams.

Baby's Hands

Look at a vigorous, healthy baby when it is asleep; at least one little hand is up near its face —look closely; that little hand is a chubby fist, for the hand is closed and the thumb is turned in toward the palm of the hand.

If the baby is exceptionally strong and well, very likely both little fists are doubled up in the same way.

When about to be fed, the healthy baby will very frequently double up one or both little fists at sight of the breast or bottle.

The position of the hands is often an index as to how the baby feels. If both hands are up toward the head and the fists doubled up, it is usually well.

If only one hand occupies such a position, it still may be well, but the close observer will look critically for possible signs of approaching physical disturbance.

If both hands are down by the baby's side, the circumstance may be regarded as suggestive of something wrong, but still the baby may be apparently well.

If both hands are down by the side and the hands are open and the fingers limp, and especially if there is a little moisture on the surface of the skin between the fingers, this circumstance is especially suggestive of some more or less serious digestive disturbance. The character and quantity of the diet may need to be changed or the child may not secure sufficient sleep, or some toxic materials may have been absorbed due to insufficient ventilation, lack of cleanliness, or improper care of bottles and nipples.

THE NURSE AND BABY'S HAND

"Sometimes with heavy heart I go
About my nursing tasks, and slow
Tears hurt my eyes. Ah, then I creep
Where baby, darling, lies asleep;
The white sweet blossoms of the hand
I see as there in tears I stand,
Tell me the secret of that power
That sends me singing for an hour.
The laying of the hands—I see
The meaning of that mystery.

"I sing the baby's hand; and yet
I surely never would forget
The baby's eyes, and baby's smile.
I know I'd sooner miss a mile
Of flower-white meadows in the sun,
With lace of grasses overspun;
For daisies blossom every year;
Next spring these smiles may not be here."

I sing the baby's hand; and yet
I surely never would forget
The baby's call—the baby's cry,
It's like a summons from the sky;
'Tis hunger, illness, fright, grief or pain.
What joy to make all right again!
And then to such holy vigils keep,
Till baby smiles in peaceful sleep!

"I sing the baby's hand. But stay!
For know you not that on my way
I pass the baby's silken hair,
Ruffled by breezes here and there?
To me 'twould little wonder be
To catch a breath of melody;
What wind would seek for fairer strings
To give its soul of music wings?
What mortal lips could be so near
And leave unkissed the baby's ear,
Untouched the dimple that lurks in
The tiny, rounded, fragrant chin?
And underneath the chin—ah! there
Lie kisses all unseen as air.

"Ah, baby Sunshine, dear thou art,
Best treasure of a nurse's heart.
And, baby dear, if this be true,
That all the love I have for you
Is but a hint whereby I guess
At God's unmeasured tenderness,
That every soul of every race,
Guided by Love, will find Love's place,
For reads it not in Holy Writ,
'He seeketh till he findeth it?'
I will be glad at heart, and trust,
If Love creates, redeem Love must."